Modern packaging

Nominated for *Packaging's Hall of Fame*®. Story on Page 98

June 1952

Triples Production

HEAT-SEAL coatings outspeed usual methods by as much as 2 or 3 times. Think of what that means to packagers in terms of increased production! Heat-Seal coatings are easy to use. They give positive adhesion to a wide variety of surfaces.

National's Heat-Seal coatings are already being used for many packaging applications. New uses are being developed all the time.

National can supply converters with:

Direct Heat-Seals— in lacquer, emulsion, and hot melt forms.

Delayed-Tack Heat-Seals—in emulsion form.

We'll be glad to send a technical representative to help you choose the right heat-seal for your packaging problem. Just clip and mail the coupon.

They're all HEAT-SEALED

Labels for Glass Bottles

Labels for Transparent Tissue Wrapped Packages

Individual Bandage Wraps

Individual Packets for Soup Mixes, Salt, Sugar, etc.

Closures on Plain and Wax-Glassine Bags

Milk Containers

Labels for Phonograph Records

Specialties—such as Cloth-to-Cardboard

National ADHESIVES

National Adhesives
270 Madison Avenue
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MP

YES—We're interested in *Heat-Seals* for _____ (application). Please have one of your representatives call on us.

Name _____ **Title** _____

Company _____

Address _____

City _____ **Zone** _____ **State** _____

PLASTAFOL

NEW TRANSPARENT PACKAGING BY GAIR

This new GAIR PLASTAFOL package which is a combination of Rigid Plastic with GAIR famous CARTONS is an outstanding achievement in the folding carton industry.

GAIR PLASTAFOL combination carton is definitely a SELL-ON-SIGHT package with a large area for product visibility. The ingenious transparent panels are so sturdy and rigid that they will not crinkle or break even when the cartons are used for mass displays on the counter, shelf or windows. PLASTAFOL is a sales-promotion masterpiece.

ROBERT GAIR COMPANY, INC. 155 EAST 44th STREET, NEW YORK • TORONTO

PAPERBOARD • FOLDING CARTONS • SHIPPING CONTAINERS

Modern packaging

Vol. 25 No. 10 June 1952

General

Technical

Departments

REDINGTON *Type 25X*
Cracker
CARTONING MACHINE

YOU CAN PROFIT BY
Full Packaging Efficiency
EVEN IF YOUR LINE INVOLVES
Extreme Package Dimensions

A broad and varied line, like that of NATIONAL BISCUIT COMPANY, frequently means an extreme variation in package sizes and shapes. Under these circumstances high efficiency on the packaging line is hard to achieve. But in many such cases REDINGTON Cartoning Machines have been adapted with great success.

Type 25X, illustrated, is a modification of a standard Redington machine especially developed to handle graham crackers in cartons up to 13½" in length. Fully automatic, it takes the wrapped groups of crackers directly from discharge belts of wrapping machines . . feeds them through timing mechanism . . arranges them in one row . . transfers the proper number to intake conveyor pocket . . inserts them into straight-tuck cartons. It then glues the tucks, and the end-panel to the side-flaps, for additional security.

This machine, like all REDINGTONS, is built with such long-life, high performance features as: Ground and Polished Shafting . . One-Piece Cast Iron Frame . . Shafting turning in Self-Aligning Roller Bearings . . Smooth Gear Train Drive . . and many others.

★ **PACKAGERS: SEND FOR COMPLETE NEW ILLUSTRATED CATALOG** showing standard and special REDINGTON Machines for Cartoning or Wrapping every type of product from mints to mason jar lids. And call upon our broad package-engineering experience to help with your problem (our New York office is convenient for service to Eastern packagers).

REDINGTON
AUTOMATIC MACHINES for CARTONING . . WRAPPING SPECIAL PACKAGING
– since 1897 –

F. B. REDINGTON CO., 110-112 S. SANGAMON ST., CHICAGO 7, ILL.

Modern packaging

EDITORIAL

Can this be monopoly?

A CURIOUS THING IS HAPPENING down in Wilmington, Del. The Government has hauled the Du Pont company into Federal Court on the charge that Du Pont hasn't sufficient competition in the sale of a transparent packaging film: to wit, cellophane. But, to the delight of the defendant and the abashment of the prosecution, some of Du Pont's bitterest rivals have been rallying to the witness stand to confute the charge.

Dr. Joseph G. Davidson, a vice president of Union Carbide & Carbon Corp., put it this way: "We've spent more than 30 years competing with the Du Pont company . . . We think we're just as good as they are any day in the week—and twice on Sundays."

The defense has sought to bring out not only that there are two healthy competitors—Sylvania and Olin—in cellophane itself, but that cellophane as a packaging wrap is far from being unique and indispensable, as the Government contends.

Frederick S. Leinbach, secretary of the Riegel Paper Corp., displayed various packages from the witness stand, some wrapped in cellophane and some in waxed papers. Obviously, he pointed out, these jobs could be done just as well with paper as with cellophane—and often should be.

Bert W. Martin, president of Shellmar Products Corp., one of the largest cellophane converters, testified, "I've taken packages out of cellophane because I thought I could do a better job with something else."

Du Pont's own assistant director of film sales, Robert R. Smith, happily admitted from the witness stand what would be heresy at any other time: that the company has tried unsuccessfully for 25 years to convert some of the biggest users of wraps from waxed paper or glassine to cellophane.

During the recent Packaging Show, court adjourned for a day to Atlantic City, to see at first hand some of the transparent films which Du Pont considers competitive with cellophane. By coincidence, the Celanese booth displayed two packages wrapped in clear film—one cellophane, one acetate—with a placard asking, "Can you tell which one is the cellophane?"

If the Judge could tell, he didn't say.

The Editors

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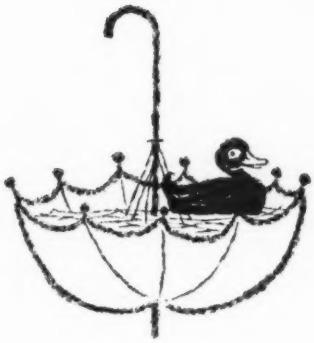

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...easier opening*

*with Zip-Tape®

faster selling*...

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Cuts labeling costs up to 70%

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The Woodman Rotary Saddle Labeler will attach labels to your present bags . . . no special bag materials required. If you are already using saddle labels, you can cut present operating costs up to 70%. The Woodman Rotary Saddle Labeler handles any bag size up to 11 inches wide, and label widths from 2½" to 8½". Heat seals cellophane, glassine, polythene, wax, and combination bags.

Installation of a Woodman Rotary Saddle Labeler Will mean greater profits for you . . .

SEND COUPON BELOW for COMPLETE DETAILS.

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Gentlemen:

☐ Please send me your free Booklet describing the Woodman Rotary Saddle Labeler.

☐ Please have your sales representative call on me.

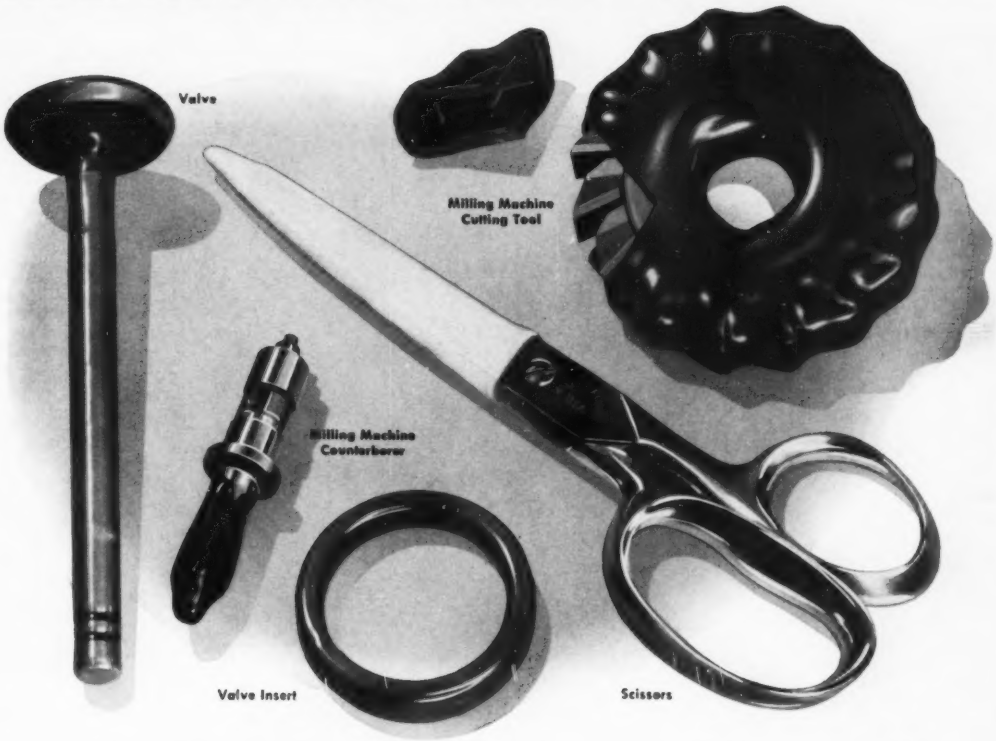
Name_____

Address_____

City & State_____

Another new development using

B. F. Goodrich Chemical *raw materials*



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does a great protective job

WHAT do you want protected against chemicals, corrosion, oil and gas, tarnish or scratching? Here is a simple operation that does the job at low cost.

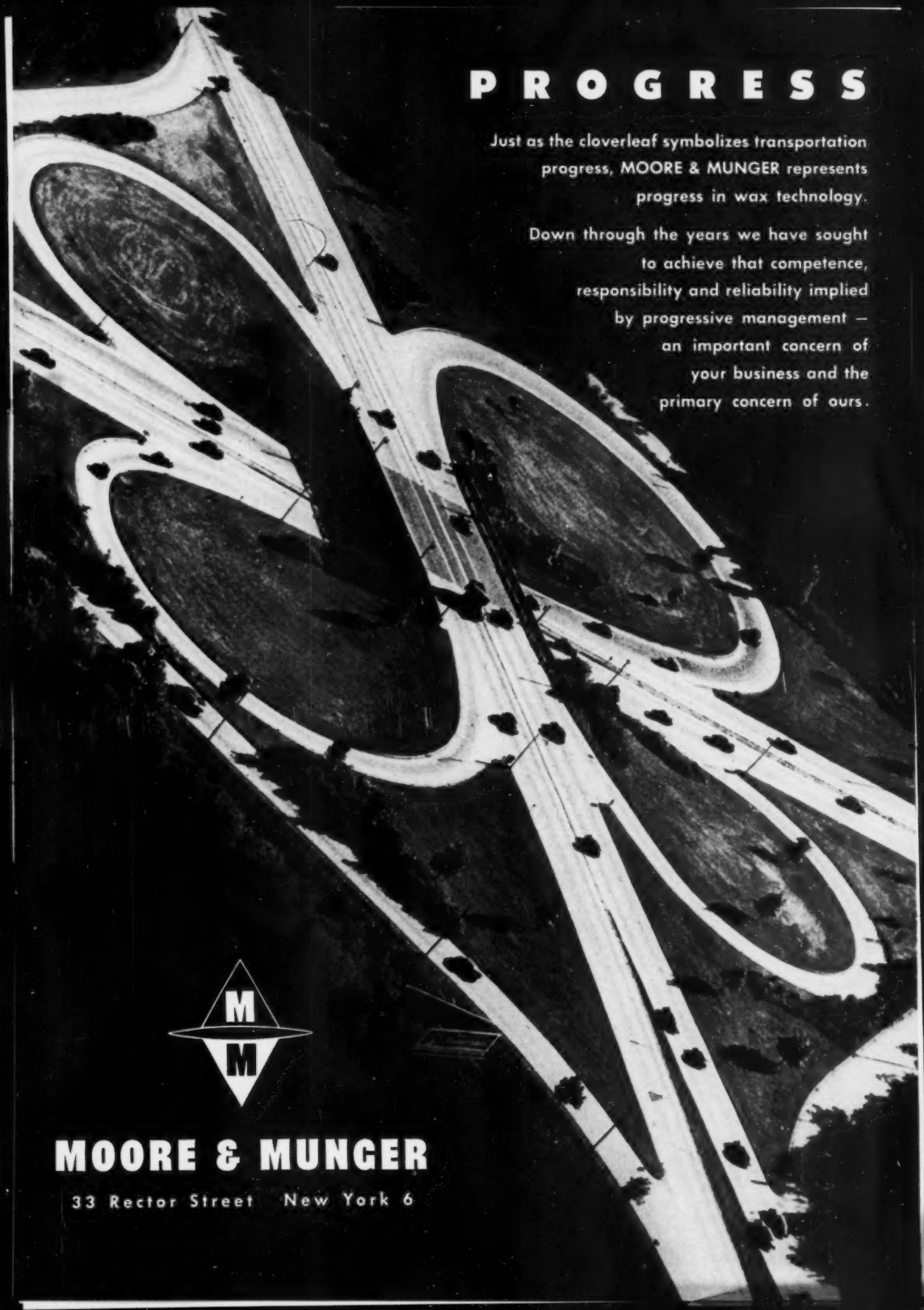
All you do is dip the article in Geon-based plastisols, and your protection is good for a long period. It's also good as protective packaging for overseas shipment.

When the article is ready for use you can strip off the skin in one simple operation. Machine parts, valves, tools, medical instruments, automotive parts and utensils can all be protected by the Geon dip-and-strip skin method.

Plastisols based on Geon paste resin have many uses—and many advantages, too. For they can be made to resist heat and cold, water, weather and abrasion . . . gas, oil and many chemicals. And operations are simpler, because no expensive solvents or recovery systems are needed. There's no fire hazard. Manufacturing costs are reduced. Perhaps one of the versatile Geon materials—resins, latices or compounded plastics—may help you improve or develop more saleable products. For helpful, technical advice, write Dept. GL-6, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario. Cable address: Goodchemco.

GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON organic colors



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Down through the years we have sought to achieve that competence, responsibility and reliability implied by progressive management — an important concern of your business and the primary concern of ours.

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Don't fail to get the full story of these exciting new gravure colors. Write, wire or telephone for complete information.

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4 COLORS AVAILABLE
SIGNAL GREEN · FIRE ORANGE
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FHLoress INKS ARE TOUGH
They do not scratch and will withstand rough handling. Colors do not deteriorate in storage.

USE THEM FOR
CARTON PRINTING, BOXES, PACKAGE WRAPS, DISPLAYS, ETC.

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does your sealing tape measure up?

What is the report on product damage? Only when you use a sealing tape that has been tested to withstand all types of stress and strain . . . are you sure your shipping carton is safe to the end. The impartial findings of a leading research firm has proved, without doubt . . . that sealing tape is the safest way of protecting a package from possible rough handling and shipping accidents. What about your sealing tape? Does it measure up to its job of safe delivery all the way . . . every time?

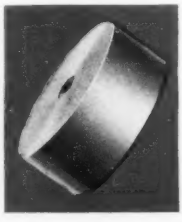
To be sure your shipping cartons stay sealed . . . seal with Sterling Supreme gummed tape.

Sterling Supreme provides protection for your products. It is the super-standard, premium-quality sealing tape created for all packaging needs. Ideal for high speed and difficult packaging problems. Reinforces carton corners...seals out dust and moisture.

Sterling Supreme has a patented "tread" gumming to prevent side-slip. A fast, efficient sealing tape, Sterling Supreme also is "flexoned" for pliability. It comes packed in cartons with moisture-proof lining for your convenience . . . always remains clean, fresh, ready-to-use at your taping machines. Available in a complete range of colors . . . plain or printed.

For all your gummed tape requirements, ask your paper merchant for super-standard Sterling Supreme.

The GUMMED PRODUCTS Company



Offices • **TROY, OHIO** • Mills

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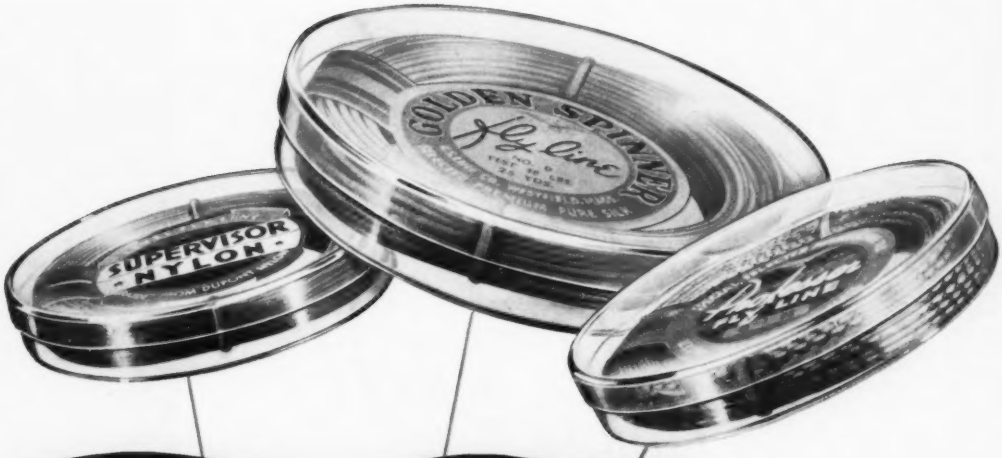


U. S. LINE reels in Sales with TRI-STATE Rigid Plastic Boxes

U. S. Line Company, Westfield, Massachusetts, one of the first fishing line manufacturers to use Tri-State Rigid Plastic Boxes, reports: "Since packing our fly lines individually in Tri-State rigid plastic boxes, our sales on these items have increased at least 50%. These lines—which are finished in oil, baked, and honed—preserve their original finish and flexibility to a remarkable degree even when carried in stock by the dealer from one season to the next. The container is well worth the cost."

Gleaming, transparent Tri-State Boxes which permit merchandise to be clearly seen and, at the same time, protect it from dirt, moisture and humidity, lure not only fishermen but customers for many kinds of products.

And the *reusability* of these boxes adds to the purchasers' satisfaction. After the original contents have served their purpose, the fisherman finds he has an excellent depository for spinners, flies and other tackle; the housewife, an ideal container for service in the refrigerator and throughout the home. This is the *bonus feature* that assures repeat sales.

Our stock box No. 52 (4⅜" diam. x ⅝" deep) affords an outstanding packaging and merchandising medium for U. S. Line Company. Enhance the appeal of <u>your</u> products, preserve their quality, and increase sales by packaging in Tri-State rigid plastic boxes! You may select from our wide range of stock sizes and shapes, or we'll mold to your specifications.

The best Rigid Plastic Boxes are Injection Molded by

TRI-STATE PLASTIC MOLDING COMPANY, Inc.

HENDERSON 6, KENTUCKY

NEW YORK: 12 E. 41st St., MUrray Hill 3-6572 **CHICAGO:** 176 W. Adams St., Franklin 2-7292

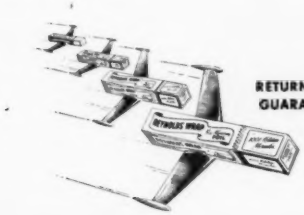
Zillionth Presentation of the "Philadelphia Story!"

You'll have to excuse the "zillionth." You see *this* "Philadelphia Story" has been going on for over 70 years . . . continuous performances, day after day. Nobody could possibly estimate how many people have enjoyed it how many times.

Introduced in 1880, Philadelphia Brand Cream Cheese was one of the first food products to be packaged in foil . . . starting with "tin foil," then aluminum foil. Other materials have been tested, but aluminum foil remains the only perfect guardian of its delicate flavor and smooth quality.

Different products use Reynolds Aluminum Foil for different reasons. Cream cheese uses it for its excellent refrigerating qualities as well as flavor protection; butter and margarine for factory freshness and prevention of odor pick-up; dehydrated soups for security from hygroscopic spoilage. Sugar-coated cereals, requiring absolute moisture protection, find aluminum foil indispensable. And it keeps baked goods flavor-fresh up to five times longer.

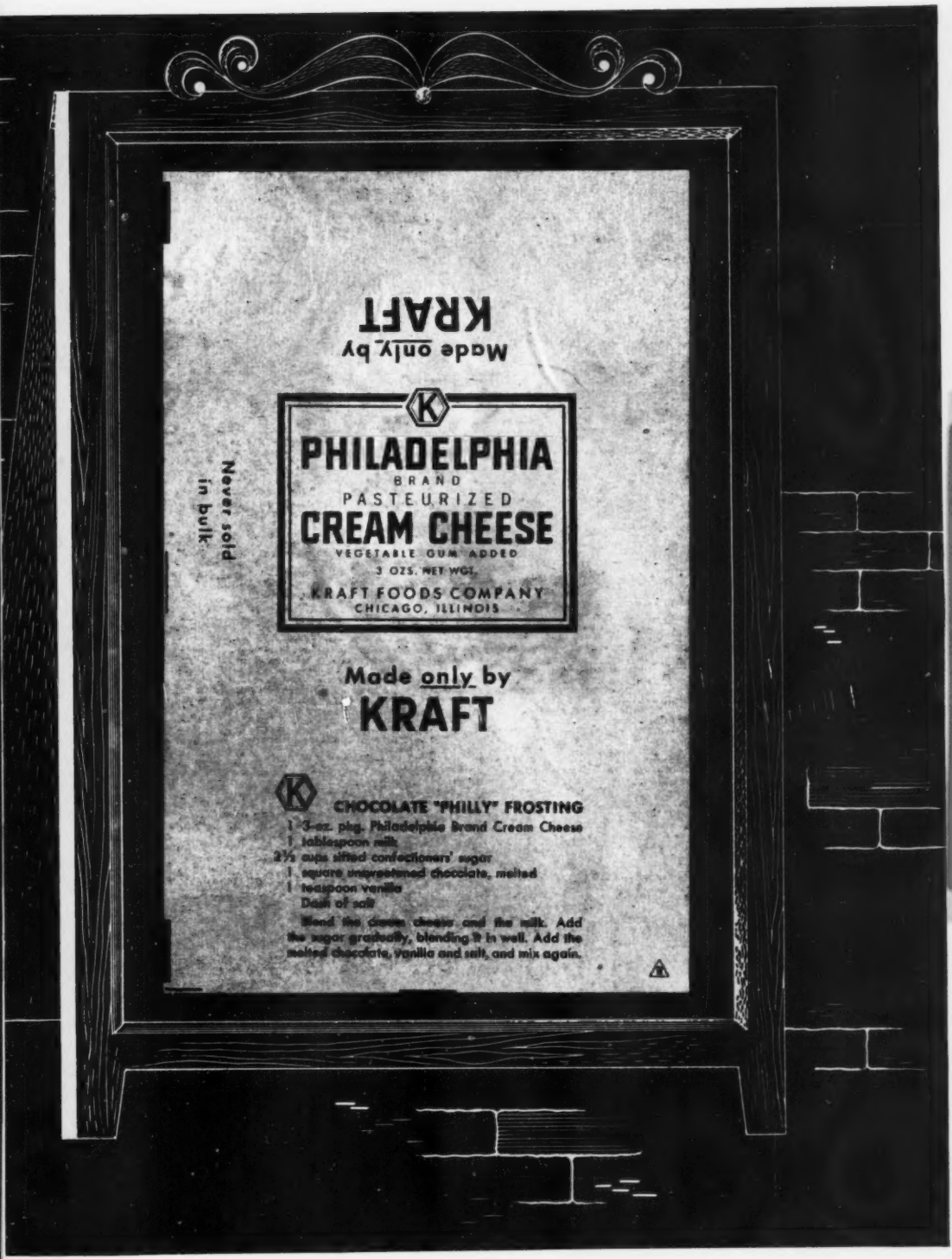
The powerful eye-appeal of color printing on bright metal is another reason why the list of Reynolds Aluminum Foil packages and labels is a fast-growing roster of famous brands. Plan to join this sales-building parade. Write to Reynolds Metals Company, General Sales Office, Louisville 1, Kentucky.



RETURN FLIGHT GUARANTEED!

Pioneers of Progress in Aluminum Foil Packaging

REYNOLDS ALUMINUM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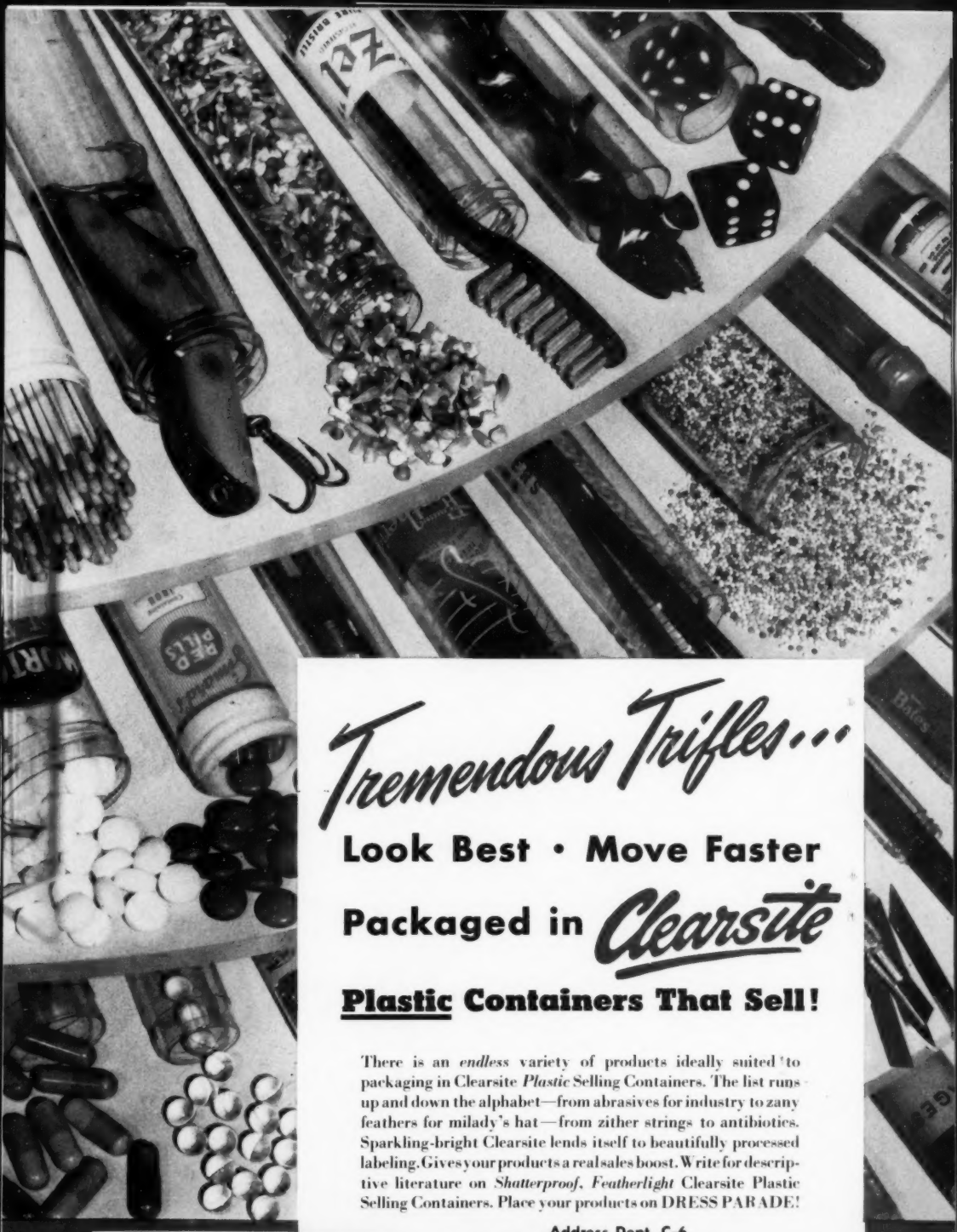
CHICAGO, ILLINOIS
Never sold in bulk
Made only by
KRAFT
CHOCOLATE "PHILLY" FROSTING
1 3-oz. pkg. Philadelphia Brand Cream Cheese
1 tablespoon milk
2½ cups sifted confectioners' sugar
1 square unsweetened chocolate, melted
1 teaspoon vanilla
Dash of salt
Blend the cream cheese and the milk. Add the sugar gradually, blending it in well. Add the melted chocolate, vanilla and salt, and mix again.



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There is an *endless* variety of products ideally suited to packaging in Clearsite *Plastic* Selling Containers. The list runs up and down the alphabet—from abrasives for industry to zany feathers for milady's hat—from zither strings to antibiotics. Sparkling-bright Clearsite lends itself to beautifully processed labeling. Gives your products a real sales boost. Write for descriptive literature on *Shatterproof*, *Featherlight* Clearsite Plastic Selling Containers. Place your products on DRESS PARADE!

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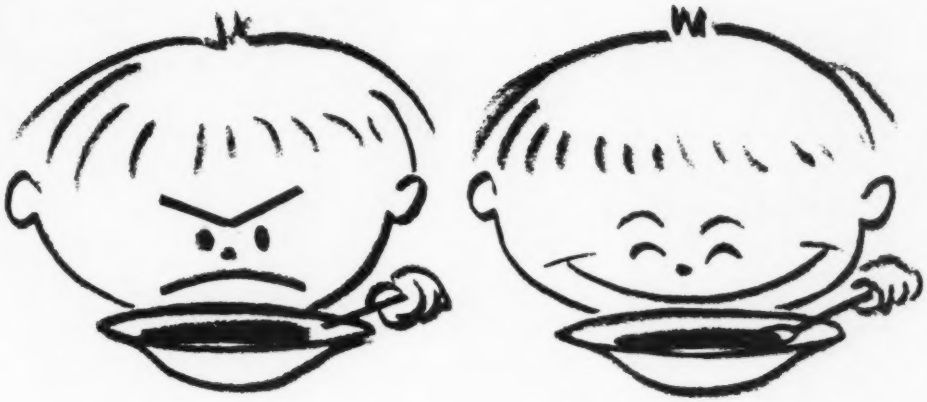
Clearsite ... is foresight



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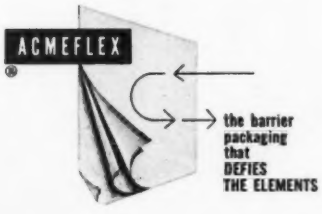
ACMEFLEX® makes the difference!

Acmeflex is science's new invention for the preservation of your product. Acmeflex is more than just a protective packaging material. It is a barrier between your product and the elements of the outside world . . . the elements that would change the taste, fragrance, freshness, dryness, or just plain goodness of your product. Acmeflex can be engineered to the specific requirements of your product, and is designed for high speed packaging equipment. Samples to solve your own problem are available without obligation. Write Dept. MP1.



ACME BACKING CORP.
Brooklyn 6, New York

MILLS PLASTIC Bottles shape up to build product sales

CUSTOM BOTTLES—Give free play to your imagination in planning the use of custom shaped ~~CYLINDRICAL~~ BOTTLES for your products. By combining our engineering and molding skill with our exclusive patented process, we can produce bottles in a surprisingly wide variety of shapes and sizes—and in virtually endless colors. We also make closures and atomizers designed to meet your special needs.

STANDARD BOTTLES—Feather-light Polyethylene standard bottles are available in two styles: Mills "Cylinder" in 2-4-6-8 ounces; Mills "Oblong" in 2-4 ounces. Both of these standard styles are available in natural Polyethylene or in your preferred color. Atomizers, closures and tubing are also available in standard styles and sizes.

Let us or our sales agent show you how we can create product selling bottles for you today.

Manufactured under Patents No. 2,515,093—2,597,390—2,579,399. Other patents pending.

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desiccants

APPROVED UNDER SPECIFICATION MIL-D-3464

ideal for method II dehydrated packaging

When parts and equipment must be packaged moisture-free . . . specify Culligan Desiccants. Millions upon millions of bags of Culligan Desiccants have been delivered for a multitude of Method II dehydrated packaging applications. The fact that over 2,000 leading organizations have consistently specified Culligan Desiccants is your assurance of service, quality and reliability.

inquire about **CULLIGAN DESICCANTS** *for dehydrated packaging of foods and pharmaceuticals*

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- Culligan Desiccants are backed by years of research, production and performance.
- National field staff service of expert Culligan packaging engineers.
- Available in all standard bag sizes, in bulk, or custom packaged to fit your immediate needs.
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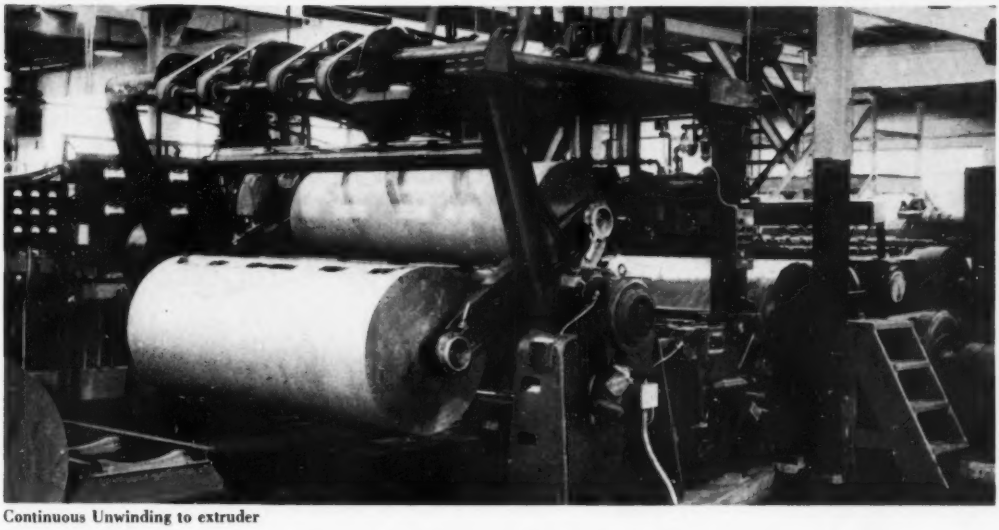
for literature and information, write

DESICCANT DIVISION, **CULLIGAN ZEOLITE COMPANY** HOME OFFICE: NORTHBROOK, ILL.

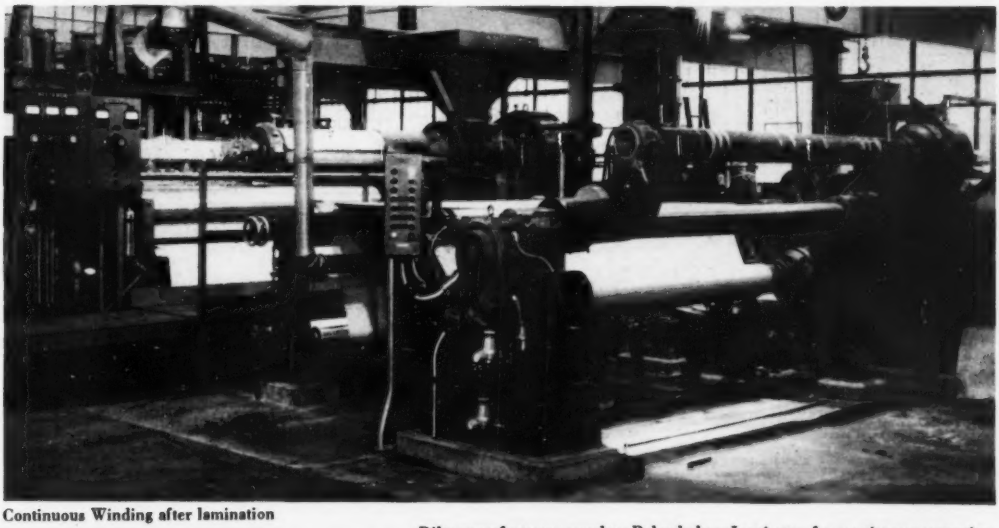
Exclusive distribution in Canada by Canadian Industries, Ltd.; offices in principal cities



Continuous Unwinding to extruder

Polyethylene Laminated to Paper Without Stops for Roll Changes

Extruder-Laminator at St. Regis Paper Co., Carthage, N. Y. Employing Kohler System reels; the operation is continuous. ***Write for DOM-8 for details.***



Continuous Winding after lamination

Dilts manufactures complete Polyethylene Laminator for continuous operation.

Protection... that makes friends

Alcoa TopSide Closures serve Gallo two important ways.

First, they doubly protect fine flavor—by sealing Gallo bottles at *both top and sides.*

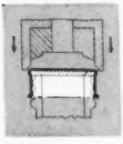
Second, they make friends with Gallo customers—because they're so smooth working, both opening and closing.

Using Alcoa's exclusive sealing process, you can win friends for your product while increasing the efficiency of your capping operation. Applied automatically, at speeds up to 400 a minute, Alcoa non-toxic aluminum closures are "tailor-made"—with threads rolled-on to match each individual bottle.

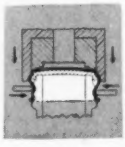
For full information on TopSide and other Alcoa closures, call your local Alcoa sales office, listed under "Aluminum" in your classified phone directory, or write:

ALUMINUM COMPANY OF AMERICA
1705-F Gulf Building • Pittsburgh 19, Pennsylvania

How Alcoa TopSide Closures are tailored to give each bottle a double seal



With the cap held down tightly on the bottle, rollers move in and roll on the threads, conforming perfectly to the contours of the bottle.

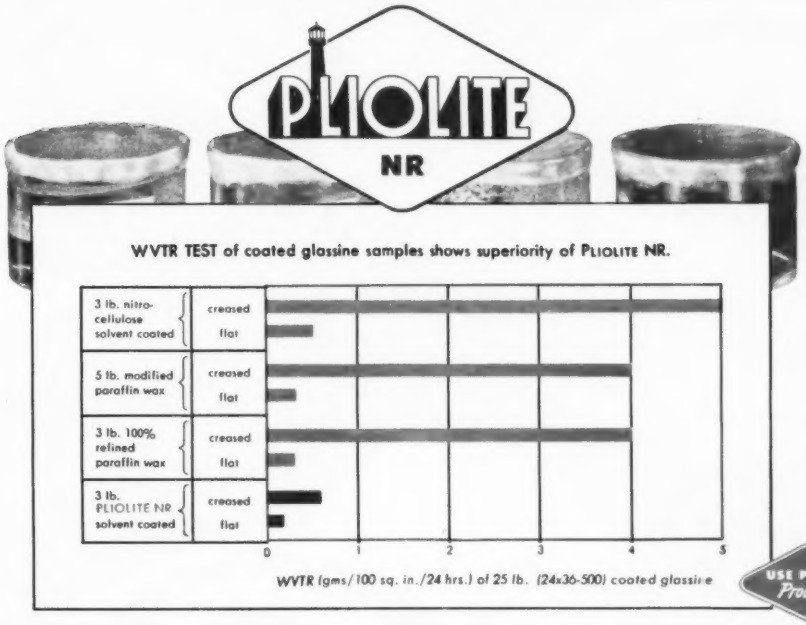


Controlled pressure secures cap on sealing surface, embedding bottle lip into cap liner, effecting top and side seal.

ALCOA
ALCOA CLOSURES
FORMERLY SOLD AS ALSEAL SEALS

NOW 6:30 P. M. EDST every Sunday—"SEE IT NOW" with Edward R. Murrow . . . brings the world to your armchair . . . CBS Television

For superior moisture resistance coat glassine with



PLIOLITE NR—Goodyear's cyclized natural rubber resin for paper coating—exceeds most available coatings on glassine papers, in imparting moisture resistance, either on flat or creased stocks. The graph shows you comparisons between PLIOLITE NR coatings and other commonly used materials.

You get these outstanding results with fewer pounds of coating material per ream, thanks to PLIOLITE NR—with its ideal combination of low water-vapor transfer and low density.

And PLIOLITE NR has excellent stability and assured anchorage which mean constant moisture protection for long periods. *Coatings no more than 0.0001 inch thick have maintained their moisture-vapor resistance at a constant rate over 2½-year periods.*

Solution coatings of PLIOLITE NR are easily formulated for ready application on all types of papers. Ask a Goodyear Chemical Division Representative for details, or write:

GOODYEAR, CHEMICAL DIVISION, AKRON 16, OHIO

Pliolite—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR

THE FINEST CHEMICALS FOR INDUSTRY


Which Style
Oneida Package
Meets Your
Product Need?
Flat Bag
Square Bag
Automatic
Satchel Bottom
Envelope
Window Full Face
Window Die Cut
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ROYAL SCARLET
COFFEE
Modern
WAFFLES
Durkee's
Cadbury

Right now your most profitable move in packaging is to OVP—

ONEIDA VERSATILE PACKAGING!

For time and time again Oneida's packaging engineers come up with the most appropriate film or paper, and construction for the job; creating sales-sparking designs, and reproducing them with sharp crisp printing to get the most effective sales results.

Oneida has the facilities and know-how to fabricate just about every type of film and paper, producing printed rolls and sheets, flat, square, automatic, satchel-bottom, envelope and window style bags; featuring printing processes such as aniline, rotogravure, and oil.

Move your package to greater sales success. Take it to Oneida. Four plants throughout the U.S. are at your service. Contact the plant or office nearest you today.

Rolls and Sheets

Converters and Color Printers of Bags, Envelopes, Sheets and Rolls from: Glassine, Cellophane, Pliofilm, Parchment, Polyethylene, Sulphite, Foil, Acetate, Kraft, Waxed, Coated and Laminated Grades... in Flat, Square, Automatic, Window, Satchel-bottom, Duplex, Embossed and Heat-Lok Styles.

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paper products inc.

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3629 East First Street, Fort Worth, Texas • 8119 Beach Street, Los Angeles, Calif.

. . . and not a DROP!

New

POLY - COATED *Waterproof* CASE LINER

- SCORED FOR EASE IN SETTING UP
- FAST HEAT SEAL CLOSURE
- WET STRENGTH KRAFT
- COMPLETELY WATERPROOF

Polyethylene coated Liners – newest in Vanant's rapidly growing line of engineered packaging materials – meet **all** C1, C2, L2 and M requirements of Military Specifications JAN-P-125 and MIL-L-10547. Pouch style . . . scored for ease in setting up . . . heat sealable for ease and speed in closing . . . COMPLETELY waterproof. Made of 90 lb. wet strength kraft paper coated with 2 mils of polyethylene.

Write for your SPECIFICATION HANDBOOK – guide to preservation and packaging of defense materials. Registered and kept current by Vanant Field Engineers.

Call These Vanant Field Engineers.

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Allied Commodities Co.
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Allied Commodities Co.
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King & Anderson
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Jerry Goldsmith & Associates
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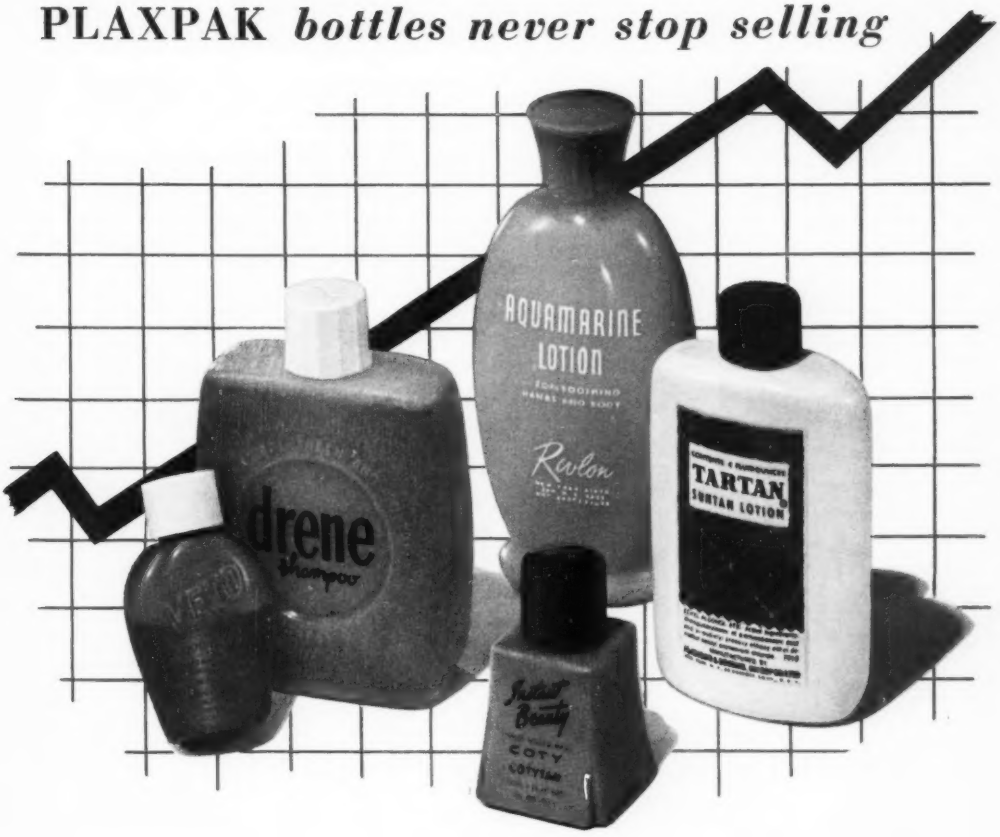
Converters of Military Specification

BAGS BARRIERS CASE LINERS Polyethylene and Other Transparent Films

PLAXPAK *bottles never stop selling*



...the products packaged in them

Pick up a product in a Plaxpak® bottle. Notice how much lighter it feels, how much more pleasant to handle than conventional containers. Here's touch appeal as well as eye appeal. Notice how much more at ease you are in using the product knowing that the bottle is smashproof and unbreakable.

Now add the convenience of just squeezing the container to dispense the contents and you can see why Plaxpak bottles never stop selling the products packaged in them.

Here's packaging that gives consumers what they want most—convenience.

PLAX CORPORATION Subsidiary of Emhart Mfg. Co. P.O. BOX 1019, HARTFORD 1, CONN.
In Canada, Plax Canada, Ltd., Toronto—Sales Offices: New York City, Chicago, San Francisco

Plax® blow-molded products made under U.S. Pats. 2128239, 2175053, 2175054, 2230188, 2230190, 2260750, 2283751, 2349176, 2349177, 2349178

From the Gardner Gallery of famous American Packages

Perhaps

IT'S BECAUSE LIKE ATTRACTS LIKE

Certainly, it's more than coincidence that so many of America's most famous products appear on the nation's shelves in Gardner cartons.

Gardner's outstanding success in the 1952 Folding Box Competition, including the grand prize for the Coca-Cola Picnic Cooler, is more evidence of Gardner's success in packaging.

One reason, of course, is Gardner's extensive and complete facilities. But more important, we suspect, is simply that like attracts like. One outstanding company likes to deal with another outstanding company ...a firm that maintains leadership by doing consistently superior work.

Here at Gardner we believe in never being quite satisfied with a good job. We feel an obligation to ourselves—and to our customers—to do even better, tomorrow, what we have gained recognition for doing well, today.

We think that's an important reason why you'll find so many of America's famous products packaged in Gardner cartons.

THE GARDNER BOARD AND CARTON CO.

Manufacturers of Folding Cartons and Boxboards

GENERAL OFFICES: Middletown, Ohio—PLANTS: Middletown, Ohio; Lockland (Cincinnati), Ohio
Sales office in Chicago, Cleveland, New York, Philadelphia, Pittsburgh, St. Louis

GARDNER

The original and only vulcanized, glass-reinforced gummed tape for the corrugator's joint

Yes . . . for everyone who packs, ships & stores goods in corrugated containers, the switch is definitely on to tape.

The reason . . . GLASCO gummed tape . . . it outperforms every other kind of corrugator's joint . . . and it's more economical, too.

Why bother with wire brads and flip-flaps, when satisfaction is guaranteed with GLASCO?

Specify GLASCO by name on your next order for corrugated containers and learn for yourself why "the switch is on."

Stocker, the only manufacturer that can custom-reinforce gummed tape and wrapping paper to your particular needs, now offers GRIPSON JH-52 Waterproofing Agent. This revolutionary formula, when used with FASCO, GLASCO, GLASPUN, etc., meets all government and industry specifications for waterproofing tape applications.

Manufacturers of the famous

GLASPUN

Corrugators & Sealing Tape

and

GRIPSON LINE

Clay Filled Cambrics
Duplex and Corrugators Kraft
Sisal Tape
Sealing Tape—Plain, Printed and Colored
Hollands and Specialty Cambrics
Set-up Box Stay
JH-52 Waterproofing Agent
Printing and Other Packaging Materials
Veneers

Consult our representatives, who are packaging specialists, on our complete line of gummed tapes and tailor-made reinforced and plain waterproof wrapping papers.

Stocker

MANUFACTURING COMPANY*

Main Offices & Plant: Netcong, New Jersey

Sales Offices: New York . . . Boston . . . Cleveland . . . Chicago
Philadelphia . . . Atlanta . . . Nashville . . . Havana, Cuba
San Francisco . . . Houston . . . Des Moines

* Affiliated with Camp Manufacturing Company, Franklin, Virginia, producers of specification kraft, chemical pulp and paper and corrugating medium, assuring uninterrupted service on your gummed tape and waterproof paper requirements.

MAKE IT RIGHT AND SEAL IT TIGHT WITH GUMMED TAPE

Cross Swing Sifters

NOW WITH *NEW* PLASTIC SIFTERS . . .

Cross Swing Sifters - - - today's modern container - - - affords your package an all-round versatility which makes it stand out in competition and step out with greater sales for you.

Cross Swing Sifters are being used for cosmetics, foods, drugs, pharmaceuticals or any other product that can be dispensed through a shaker or sifter . . . . Can we serve you?

Samplers

Cross round miniatures, an exact replica of your full size container, provides the answer for the perfect sample package. Both full size and samplers can be filled with any standard filling equipment.

Ask for a representative to call, or write for details and samples.

CROSS PAPER PRODUCTS CORP.

4377 Bronx Boulevard New York 66, New York

DESIGNERS • CREATORS • MANUFACTURERS OF INDIVIDUALIZED ROUND AND OVAL PACKAGES

RADO PACKAGES

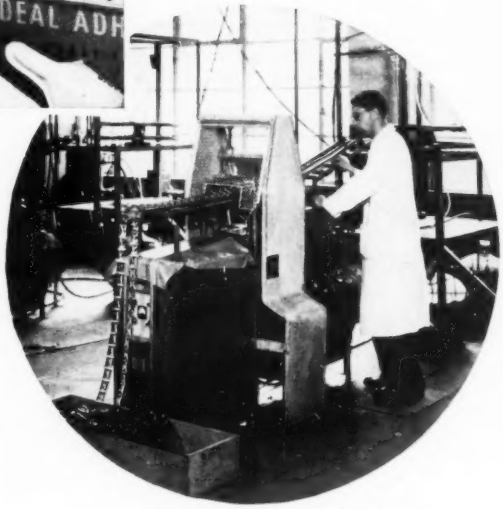
OPEN AMAZING NEW SALES POSSIBILITIES

RADO PACKAGES* are the sort of things Sales Managers and Marketing Directors dream of but rarely find—practical, radically new, low-cost packages that ideally lend themselves to all-out consumer promotion.

RADO PACKAGES are *all plastic*. They are made automatically and continuously from a wide range of thermoplastic materials, both clear and opaque. The packages are made and filled simultaneously and can be of regular or irregular shape.

Equally suitable for liquids or pastes, RADO PACKAGES can even be produced in the form of unique capless collapsible tubes which have self-sealing apertures.

If you feel your product could benefit from this *new type of packaging* that is novel, practical, low-cost and wonderfully responsive to consumer promotion, write to the Main Office of Technopol Laboratories, or to the Packaging Service Station nearest you for additional facts.



Type "A" Packaging Machine

*U.S.A. Patent Nos. 2,517,027, 2,530,400
British Patent Nos. 599174, 599183
Patented in 36 other countries. Other patents pending.

TECHNOPOL LABORATORIES LIMITED

Tel: London Wall 9452-9453 • 212 St. John Street, LONDON, E. C. 1, England • Cables: Telabor, London

Factories and Packaging Service Stations:

UNION OF S. AFRICA
UNIVERSAL PLASTIC PACKS (PTY.) LTD.
43/44, Menteith House, Smith Street, DURBAN.

SWITZERLAND
GISIGER & CO.
Office: Claridenhof, Dreikonigstrasse 21, ZURICH. Tel: (051) 27.24.47/ 25.00.30.
Factory: Obfelden.

FRANCE
(Algiers, Tunis, Morocco)
S. E. P. (Soc. d'Emballages Plastiques)
Office: 87 Rue Notre-Dame-des-Champs, PARIS 6e. Telephone ODEON 71-33.
Factory: 24 Avenue de la Republic, CHATOU, France. Tel: 274.

AUSTRIA
Tupla Gesellschaft, Vienna, IV., Wiedner Hauptstrasse 8
Telephone: A 34067

EIRE
TECHNOPOL PACKAGING SERVICES, 81/2 Aungier Street, DUBLIN. Tel. Dublin 53524.

BELGIUM
(Holland, Luxemb'g, Belgian Congo)
S. E. P. (Soc. d'Expansion des Matieres Plastiques)
Office: 41 Rue de La Vallee, (Onderbergen), GAND. Tel: 594.96.
Factory: 68-7 Rue de l'Agrafe, Anderlecht, BRUSSELS. Tel: 22.19.32.

One Call for ALL!

U.S. Pat. Reg. No. 531,356

IDEAS
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CONSTRUCTION
LAMINATION
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PROTO-TYPES
CENTRALLY LOCATED
WOOD and GLASS
PACKING and SHIPPING
ART

River Raisin has the country's most complete display service . . . as convenient as your telephone . . . our versatile art staff creates the basic idea and the dimensional construction . . . our production experts produce the quality, finished display—DIMENSIONAL DISPLAYS that attract attention and sell your product.

We manufacture
corrugated and solid fibre
shipping containers
from materials produced in
our own paper mills,
thereby enabling us to deliver
superior, colorful displays.

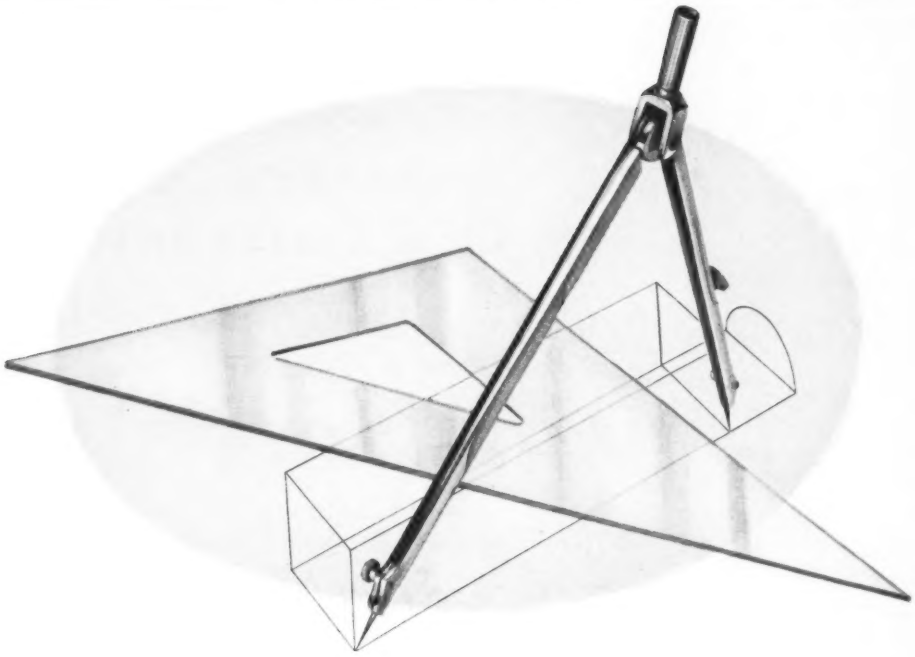
•

CORRUGATED & SOLID FIBRE
SHIPPING CONTAINERS • PACKING
MATERIALS • FIBRE BOARDS
• CORRUGATING STRAW

RIVER RAISIN PAPER COMPANY

Display Division MONROE, MICHIGAN

River Raisin
DIMENSIONAL DISPLAYS



THE FOURTH POINT IN THE TRIANGLE . . .

Every delivery of Cochran Aluminum Foil is measured point by point, against the specifications *you* set up for it.

But Cochran strives for more than technical perfection. Each Cochran delivery includes an extra point that doesn't show in the specifications: a unique personalized service that goes above and beyond all ordinary standards. People who do business with us will tell you how much this means.

Cochran FOIL COMPANY

INCORPORATED — LOUISVILLE 10, KENTUCKY

SPECIALISTS IN ALUMINUM FOIL

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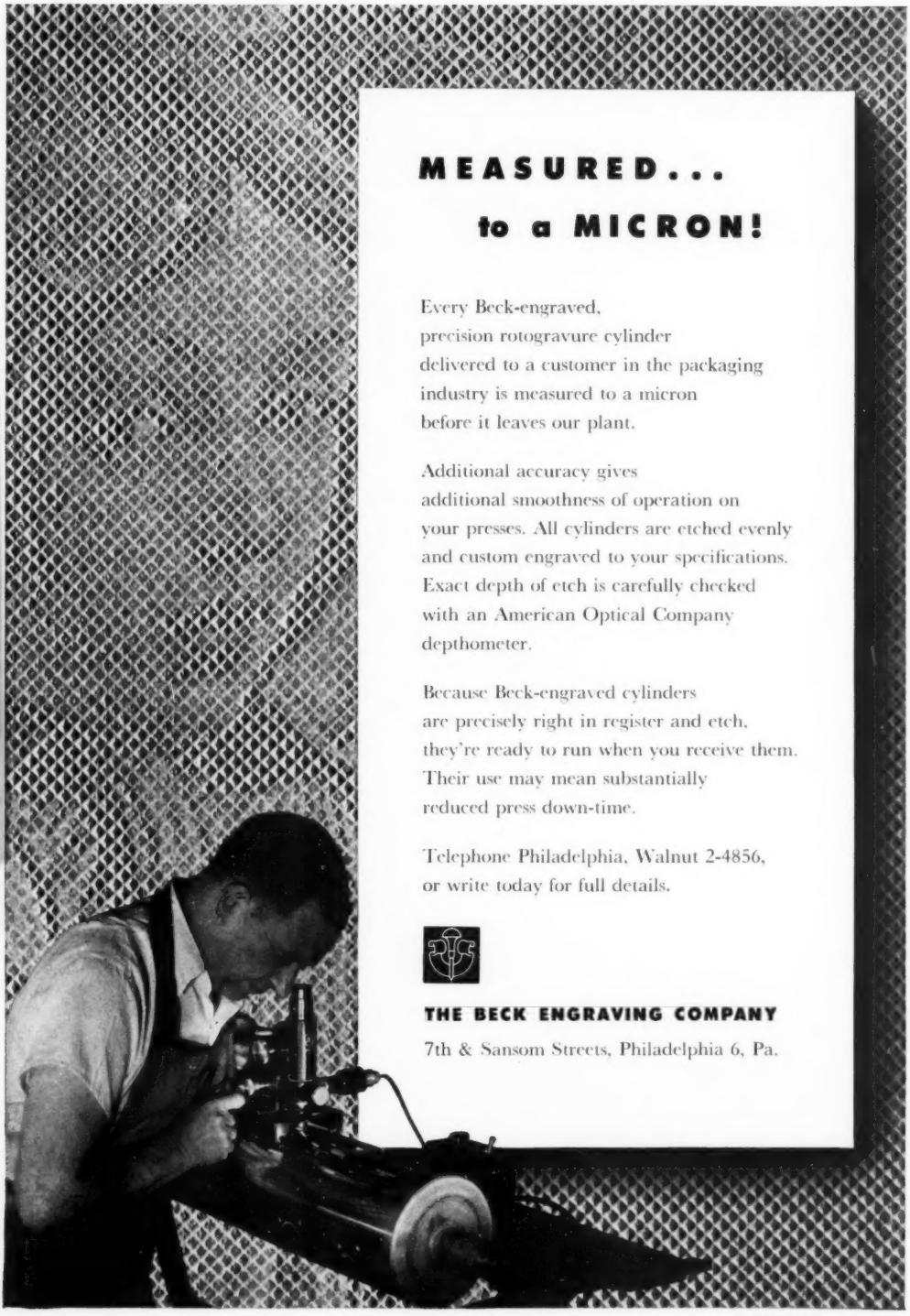


MEASURED...
to a MICRON!

Every Beck-engraved,
precision rotogravure cylinder
delivered to a customer in the packaging
industry is measured to a micron
before it leaves our plant.

Additional accuracy gives
additional smoothness of operation on
your presses. All cylinders are etched evenly
and custom engraved to your specifications.
Exact depth of etch is carefully checked
with an American Optical Company
depthometer.

Because Beck-engraved cylinders
are precisely right in register and etch,
they're ready to run when you receive them.
Their use may mean substantially
reduced press down-time.

Telephone Philadelphia, Walnut 2-4856,
or write today for full details.

THE BECK ENGRAVING COMPANY

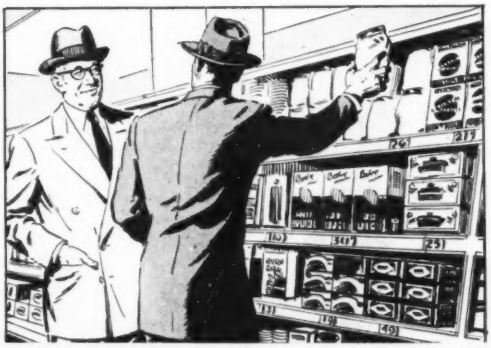
7th & Sansom Streets, Philadelphia 6, Pa.

"My job is to help your package sell your product"

SAYS JOSEPH SCHAEFFLER
DU PONT CELLOPHANE REPRESENTATIVE

"PACKAGE DESIGN is important these days, when shoppers wait on themselves, and products must sell themselves. Trained craftsmen at Du Pont have had years of experience in developing packages that ring up sales. It's my job to apply this experience to your packaging problems . . ."

"PACKAGE ACCEPTANCE by consumers is constantly being promoted by Du Pont in national magazines. Advertisements in full color are stressing the advantages of Cellophane packaging for a wide variety of products. I'll gladly supply you with reprints of these ads to use in a promotion of your own."



"PACKAGE PERFORMANCE in the store is the real measure of its selling power. I've found it usually pays to check on my customer's package in active competition. Shelf appearance, and shopper reaction often point the way to package improvement . . . more sales for you."

THESE are just a few of the many ways Joseph Schaeffler, or other Du Pont representatives, can assist you in improving your sales. He brings you all the advantages of Du Pont's years of market research and packaging know-how. Du Pont makes Cellophane, Polythene and Acetate films. So, whether you're planning a new package or thinking of redesigning your present one, call your Du Pont Representative. He'll be glad to help you. E. I. du Pont de Nemours & Co. (Inc.), Film Department, Nemours Bldg., Wilmington 98, Delaware.

DuPont Cellophane

DU PONT

Shows what it Protects—Protects what it Shows

150th Anniversary

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

THE "BANKS" LABELLER

Of Unique Design and Principle. A High Speed Fully Automatic BODY LABELLING MACHINE for Cylindrical Containers, Fitted with Electric "No Bottle — No Label" Device.

Precision labelling from 2,400 — 10,200 units per hour using one label stack only.

The "Banks" Labeller is simple to operate, occupies very little space, and positions the labels positively, accurately, and without any trace of surplus gum beyond the edges of the label, irrespective of the label shape or size.

Change from one size of container to another is obtained in a matter of seconds.

Cleaning down takes only a few minutes.

All models arranged for conveyor feed, or, alternatively, Patented Automatic Infeed Rotary Tables. The machine illustrated is fitted with Patented Automatic Infeed Rotary Table and is labelling penicillin vials.

Manufactured in 6 models suitable for use in breweries, mineral water, food, cosmetic and chemical factories, and the like.

Each model will label all round or part up to the label width capacity of the machine, from ½" up to 12" wide.

MODEL B. L. M. 3 } will fix back
MODEL B. L. M. D. } and front labels

Over 1,000 machines are at work in or on order for THIRTY Countries and 174 Towns and Cities in Great Britain.

Manufactured by Morgan Fairest Ltd., Sheffield, England

fmc

STOKES & SMITH Co

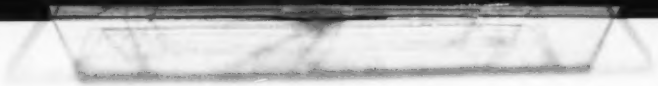
PACKAGING MACHINERY — PAPER BOX MACHINERY

Frankfort • Philadelphia 24, U.S.A.

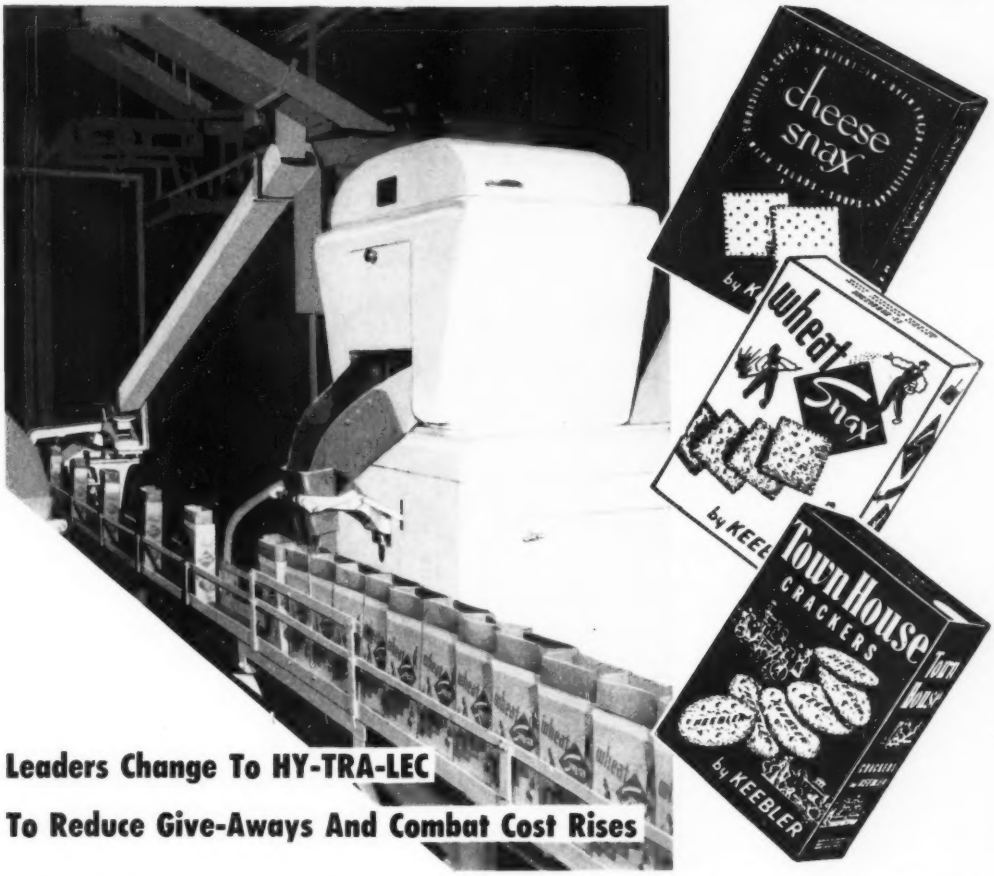
Subsidiary of Food Machinery and Chemical Corporation

Trademark
of the
highest
quality
Aluminum Foil

ALUMINUM FOILS, INC.



REVOLUTION IN THE CRACKER INDUSTRY!



Leaders Change To HY-TRA-LEC

To Reduce Give-Aways And Combat Cost Rises

Cracker and biscuit makers are old timers in packaging progress. When they change weighing systems it is significant. **38 percent of all crackers and biscuits of the dump-fill variety are now weighed and filled by Wright Hy-Tra-Lec Model CE weighing system. . . . introduced just two years ago!**

HY-TRA-LEC is that new method of weighing which utilizes the principles of "positive displacement". The particular model used on fully automatic lines in the cracker-biscuit industry consists of two units. The first prefills the box to within 98 percent of desired weight. The second fills the box at a single file rate to within 99-100 percent of exact weight.

Leaders such as National Biscuit Company, Megowen-Educator Company, and United Biscuit Company divisions use Hy-Tra-Lec to reduce over-weights and to combat material and labor cost rises.

Cracker-biscuit makers still using old methods are invited to get complete information on this new type weigher. *We also invite inquiries from other industries who desire a more accurate, high speed weighing system.*

WRIGHT MACHINERY COMPANY

ESTABLISHED 1893 · DURHAM, NORTH CAROLINA
SUBSIDIARY OF THE SPERRY CORPORATION

COMPANY SALES OFFICES: JERSEY CITY · BOSTON · DURHAM
KING & ANDERSON, SAN FRANCISCO EDWIN F. DeLINE COMPANY, DENVER
R. P. ANDERSON CO., DALLAS SPERRY GYROSCOPE CO., LTD., LONDON

NO OBLIGATION . . . MAIL TODAY!

WRIGHT MACHINERY COMPANY, 500 CALVIN STREET
DURHAM, NORTH CAROLINA

Please send me latest literature on your Hy-Tra-Lec weighers.

NAME .....

COMPANY .....

ADDRESS .....

CITY ..... STATE .....

PRODUCT .....

A Star Quartet of Economical, Sales-Building Packages

for Your Products

Bemis Deltaseal®

—This long-time favorite has exclusive pull-cut-pour spout. Billboards your brand . . . and flat tops and bottoms help build excellent mass displays.

Bemis Deltaphane®

—If your trade prefers a window package, Bemis Deltaphane, with the "picture window," is your best bet. Your brand in crisp, bright colors on all four sides. Has the pull-cut-pour top, too.

Bemis Cellophane

—There's an increasing demand for the *show window* bags—Bemis Cellophane. Bemis' bright, eye-catching printing makes your brand shine like a headlight.

Bemis Flexi-Carton®

—Sturdy, gusseted bag, single-, 2- or 3-ply. A fine shelf package, with your brand printed on all sides. Closures: sewing, taping, stapling, pasting.

Here's another bonus for you . . . Bemis Deltaseal Packaging System closes all of these types of bags (except Flexi-Carton), so you can meet the varied demands of your trade. Deltaseal Packaging System is the most economical packaging operation for you . . . *proof on request.*

Bemis is also your best source for Burlap, Cotton, Multiwall, Paper and Waterproof Bags. Ask your Bemis Man for the complete story.

Bemis

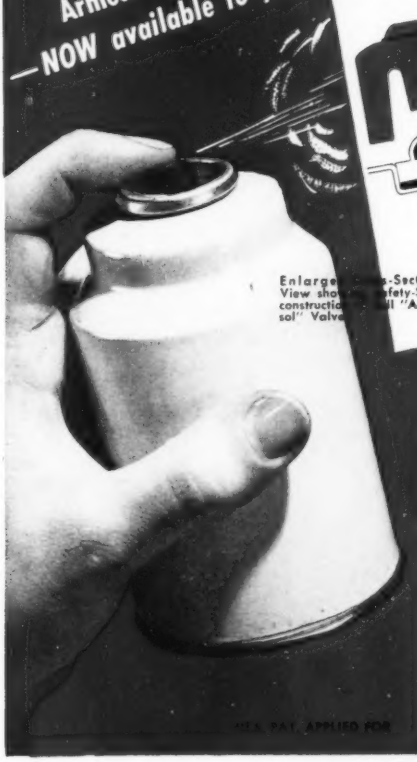
THERE'S A BEMIS PLANT OR SALES OFFICE NEAR YOU—

Baltimore • Boise • Boston • Brooklyn • Buffalo • Charlotte • Chicago • Cleveland Denver • Detroit • East Pepperell, Mass. • Houston • Indianapolis • Kansas City Jacksonville, Fla. • Los Angeles • Louisville • Memphis • Minneapolis • Mobile New Orleans • New York City • Norfolk • Oklahoma City • Omaha • Peoria Philadelphia • Phoenix • Pittsburgh • St. Louis • Salina • Salt Lake City • Seattle San Francisco • Vancouver, Wash. • Wichita • Wilmington, Calif.

NOW Permanent SHELF-LIFE

For Self-Dispensing Pressurized Products

Developed for the Armed Forces —NOW available to you!



Now, packagers of self-dispensing pressurized products can completely eliminate the serious problems of costly stock loss, and dealer, consumer dissatisfaction caused by pre-use leakage. *Gas positively cannot escape through the new Dill Super Seal Aerosol Valve. Nor can contents of the can touch and corrode the valve shut-off seal.* This valve is skillfully designed *without* an opening. By simply pressing on the spray button, an opening is pierced *when ready to use.* Check this money-saving, highly valuable merchandising feature for your product now. Our engineers invite consultation with you on the design and manufacture of any specific type you may require for Aerosol, Wet or Residual or Aerated products.

THE DILL MANUFACTURING COMPANY
CLEVELAND 3, OHIO

INSURES THE SHELF STABILITY OF YOUR PRODUCT—

THE VALVES WITH *Super Seal* SAFETY

DILL AEROSOL VALVES

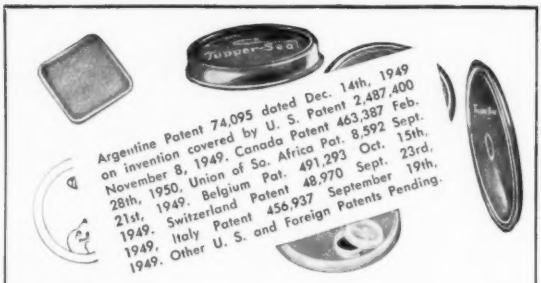
Tupper Seal, air and liquid tight flexible covers fit, and are included in the sets of all Tupperware Canisters.

The Tupperware 50 oz. Canister is "standard equipped" with the Tupper Seal, air and liquid-tight flexible Pour All cover.

The Tupper Seal, air and liquid-tight flexible Pour All cover is used on every Tupperware 20 oz. Canister.

The Tupper Seal, air and liquid-tight, Pour All cover as a cover for 46 oz. cans; Tupperware Sauce Dishes and other containers of metal, glass or pottery. Foods easily dispensed without removing entire cover.

The Tupperware Wonder Bowls are usually fitted with Tupper Seal, air and liquid-tight covers.



Argentine Patent 74,095 dated Dec. 14th, 1949 on invention covered by U. S. Patent 2,487,400 November 8, 1949. Canada Patent 463,387 Feb. 28th, 1950. Union of So. Africa Pat. 8,592 Sept. 21st, 1949. Belgium Pat. 491,293 Oct. 23rd, 1949. Switzerland Patent 48,970 Sept. 19th, 1949. Italy Patent 456,937 September 1949. Other U. S. and Foreign Patents Pending.

TUPPER! Seals

air and liquid-tight, flexible covers for Tupperware Tumblers, Canisters, Wonder Bowls, Cereal Bowls and many another container of glass, metal and pottery, the contents of which it is desired to keep fresh and wholesome.

TUPPER!

FORMAL NOTICE! 9th November, 1949

EXCLUSIVE!

U. S. Patent #2,487,400

The Tupper Corporation has attained a position of leadership in this industry by incurring great expense and expending painstaking effort in the development, design, manufacture and exploitation of its many world-known products.

The Tupper Corporation further has anticipated the inevitable attacks to which leadership is subject and has taken measures provided by law to preserve the creative rights to its products, methods and design by patent protection both in the United States and abroad.

Tupper Seals for Tupperware shown in this advertisement are just a few of the forms covered in this manner and are specifically covered by U.S. Patent #2,487,400.

Only the Tupper Corporation, by U.S.Patent #2,487,400 has the right to make, use and vend container closures in connection with any and all types of containers throughout the United States and its territories as covered by the claims of the Patent.

Tupper Corporation will protect, according to law, the exclusive rights above granted

TUPPER CORPORATION

There's a Tupper Seal, air and liquid-tight flexible cover for Tupperware 2, 5, 8 and 12½ oz. Tumblers too, and these Tupper Seal, covers fit many other containers of metal, glass and crockery.

The Tupper Seal, air and liquid-tight flexible Por Top cover, specially designed as a dispensing cover for specified diameters of containers holding foods such as syrups, salad dressings, catsup.

The cover of the Tupperware Bread Server which serves as a bread tray also is designed to give similar results as Tupper Seal, air and liquid-tight Flexible covers. Keeps contents fresh as no other such container.

When equipped with Tupper Seal, air and liquid-tight, flexible covers, Tupperware Cereal Bowls serve many another purpose.

The Tupper Seal, air and liquid-tight flexible cover made for Tupperware 8 oz. Tumblers also fits and is sold with all Tupperware Funnels as a base when funnels are used as storage containers.

TUPPER CORPORATION

Manufacturers of — CONSUMER, INDUSTRIAL, PACKAGING AND SCIENTIFIC PRODUCTS

FACTORIES: Farnumsville, Mass., and Cuero, Texas **New York Show Rooms 225 Fifth Ave.**

ADDRESS ALL COMMUNICATIONS TO: Department MP-6

EYE STOPPER

That's the effect a Dennison designed seal gives your package. It has that something extra — the result of constructive imagination, designing talent, manufacturing teamwork. Dennison experience and versatility offer you the finest in packaging accessories — tags, seals, wraps, bands, labels, merchandise cards, set-up boxes. For samples and suggestions appropriate to your product, call nearest Dennison sales office or write Dennison Manufacturing Co., Framingham, Mass.

Dennison

PAPER PRODUCTS FOR MORE THAN A CENTURY

Sterling packaging for sterling silver

Box design by Lippincott & Margulies

THE new Contour pattern, by Towle Silversmiths, is a fine example of master craftsmanship. Sterling packaging is important to Towle . . . so they turned to Dennison.

Towle wanted a box that would bring maximum display value to the point-of-sale — and still make a tasteful gift package. Lippincott & Margulies worked with Dennison to produce just such a package.

The boxes shown above are covered with rich wood-grain finish paper. They have luxurious fabric linings, double-hinged two piece covers. The Towle name is die-stamped on the covers and repeated on an embossed seal inside. Striking illustrations show the uses of the sterling silver accessories. The overall effect is wholly in keeping with the functional elegance of Contour itself.

Packages with purpose are a Dennison specialty. Why not see what a Dennison-designed package can do for your product — and your sales?

Call the nearest Dennison sales office or write Dennison Manufacturing Co., Box Division, Marlboro, Massachusetts.

LOOK TO Dennison FOR PACKAGING THAT REFLECTS THE PERSONALITY OF YOUR PRODUCT

Unacclaimed by the trade

Stein-Hall develops amazing new glue for Carton Sealing

STEIN-HALL & CO., INC. has released for general sale a new high-speed carton sealing glue. Called "CART-N-SEEL 233H", it is the result of two years of laboratory research and field tests, and is available in prepared, ready to use form.

Cart-N-Seel 233H has been tested on all types of board normally used for cartoning all kinds of grocery products, and on all well-known makes of packaging machinery.

Packaging Speeds Increased

The new glue not only gave outstandingly successful adhesion in every test, but enabled customers to speed up their machines. In several instances packaging departments were able to set new production records. One concern was able to speed up top and bottom sealing on their latest type machines to a point far in excess of the speed claimed for the machine by its manufacturers.

In spite of the superior results received from CART-N-SEEL 233H, the new glue costs no more than ordinary carton sealing glues.

Also available is a heavier version of the glue, CART-N-SEEL 233HH. This may be diluted with water to any desired consistency.

Has Other Uses

Both 233H and 233HH have also been tested exhaustively for other packaging operations, such as case sealing, tight wrapping, and double package making. In every instance, the results were definitely superior to those obtained from ordinary glues.

The superintendent of one very large plant stated: "233H has given me the best tight wrapped package I've turned out in 25 years."

Additional information may be obtained from the national headquarters of Stein-Hall & Co., Inc. at 285 Madison Ave., New York 17, N. Y., or any of their 17 branch offices in principal cities of the United States and Canada.

one glue for many operations

dozens of new users agree

for trial run fill in this coupon

STEIN HALL & CO., Inc., Dept. MP-5
285 Madison Ave., New York 17, N. Y.

Please ship us 5 gallons of CART-N-SEEL 233H at quantity price. We understand if we are not fully satisfied we may return any unused portion at your expense and obtain full credit.

COMPANY.....

ADDRESS.....

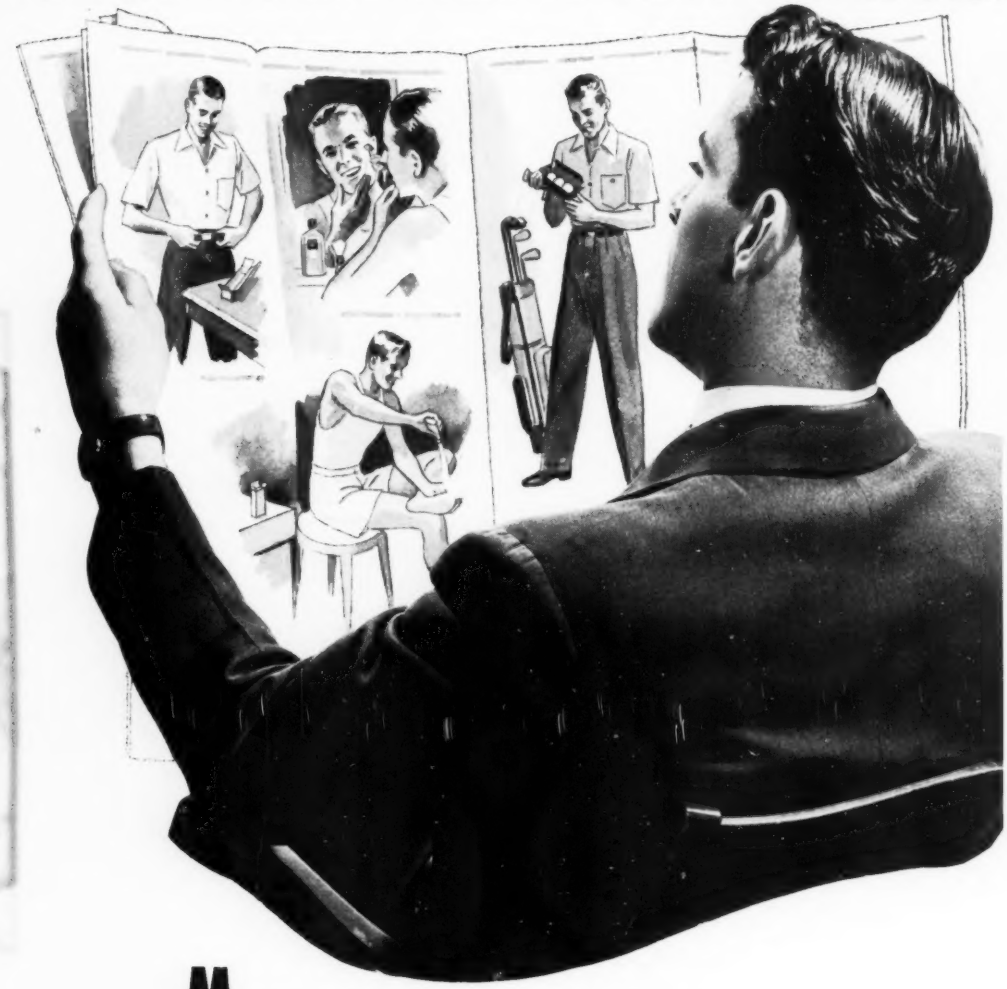
CITY..... STATE.....

PER..... TITLE.....

MACHINE.....

OPERATION.....

THE BEST THINGS COME IN ~~SMALL~~ *Custom* PACKAGES!



Most men are busy, pressed for time . . . even when making personal purchases. That's why favorable first impressions, flashed from packages that fairly telegraph q-u-a-l-i-t-y, are so important to manufacturers of products made especially for men. And that's why Ridgelo custom-made, clay-coated boxboard—in fine folding cartons—is so regularly specified for leading brands of men's toiletries, clothing accessories, sporting goods, and the like.

Ridgelo
CLAY COATED
REG. U.S. PAT. OFF.
BOXBOARDS

Custom Made

MADE AT RIDGEFIELD, N. J. BY LOWE PAPER COMPANY

Different . . . better . . . in so many ways. More uniform, brighter and whiter, easier and cheaper to print. *And*—available in a wide variety of wonderful finishes and colors.

Representatives

H. B. Royce, Detroit
Philip Rudolph & Sons, Inc., Philadelphia
A. E. Kellogg, St. Louis
Norman A. Buist, Los Angeles

This is the "Standard" for Summertime

A straw-hatted, shoeless day . . .
and a fine string of fish
to show for it.
What kid could ask
for anything more?

This is the "Standard" for Package Printing

All prepared and ready
for the oven,
that's Frozen-Rite pies.
Inside the store freezer
their clean-looking,
eye-catching Standard-
printed wraps command
instant attention.

COLOR-CRAFT

Standard printing company

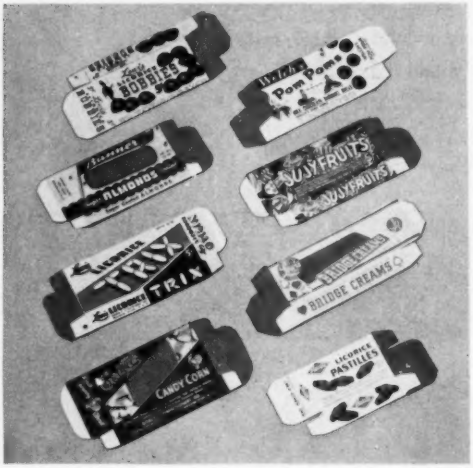
PRINTERS OF CELLOPHANE, ACETATE and GLASSINE SINCE 1936

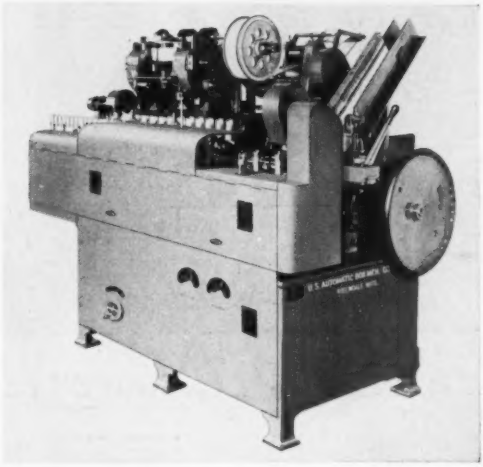
COLUMBUS, GEORGIA

Sales Offices: Dallas, Texas—Charlotte, N. C.—Jackson, Miss.

Eliminate CHANGE-OVER TIME

The Versatile C-10-CC Candy Filler Packs all these types of candy without adjustment





Candy manufacturers and distributors who package a wide variety of hard, semisoft or easily marred candies will find the Model C-10-CC Volumetric Filler ideal for their multiple requirements. It will handle all their products without adjustment when package size and volume are kept uniform. The Model C-10-CC automatically extracts the flat carton, opens it, tucks bottom flaps, cuts, forms and inserts liner into the carton and then volume fills the correct amount of candy. When desired, the liner may be omitted. Final operation on the C-10-CC folds the top of the liner closed and tucks and closes the top flaps of the carton. An automatic check weigher rejects any underweight packages. Only one operator is required to supervise the machine, and speeds of 60 filled cartons per minute are available.

Check the many varieties of candy packages shown and you'll see how the C-10-CC can fill your packaging problem. Write for complete details today.

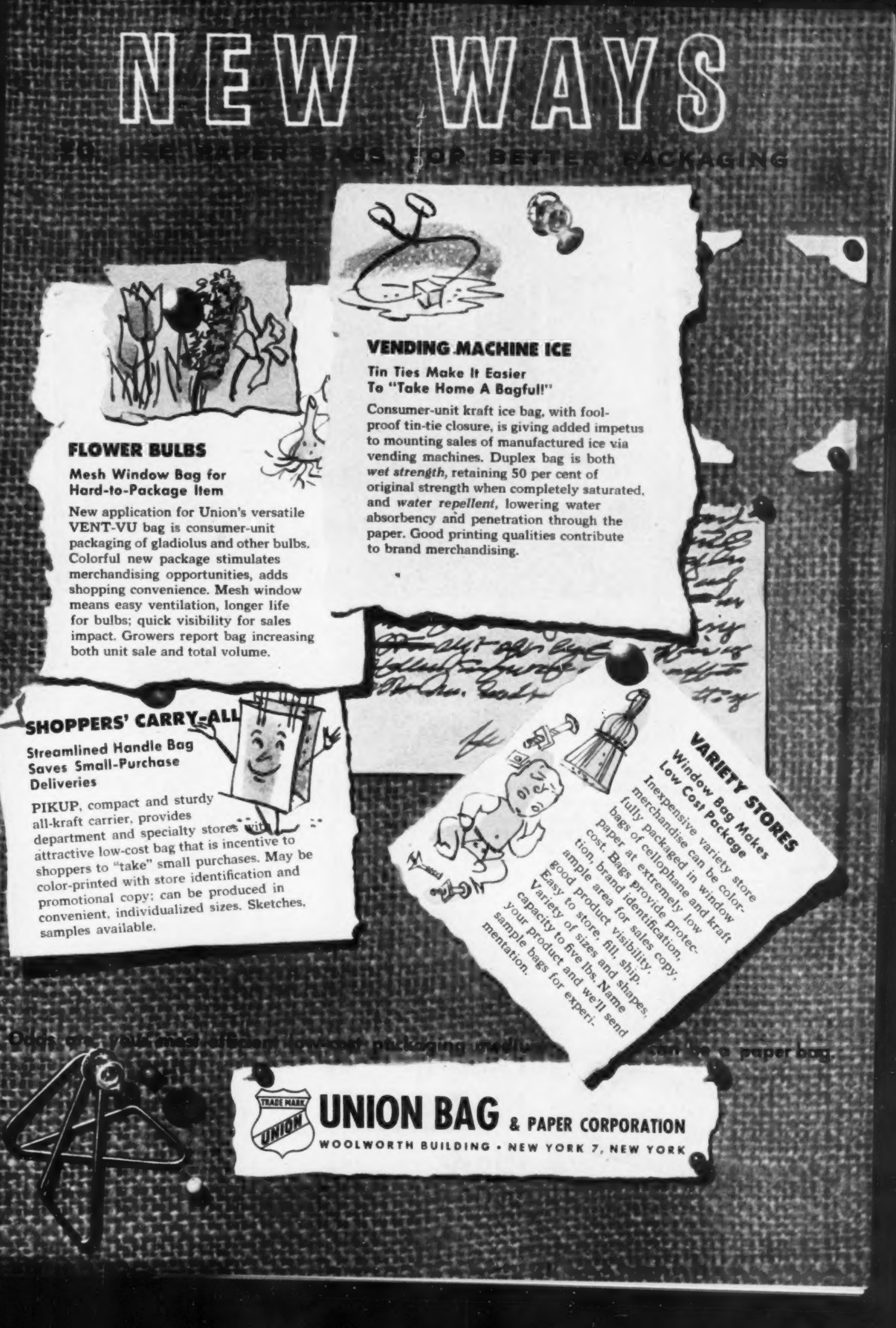
US NET & GROSS WEIGHING ★ PACKAGE FORMING & FILLING ★ CARTON SEALING, LINING, WRAPPING ★ BOX MAKING

AUTOMATIC BOX MACHINERY CO., INC.

Owning and Operating NATIONAL PACKAGING MACHINERY CO. ★ CARTONING MACHINERY CORP.

122 ARBORETUM ROAD, ROSLINDALE, BOSTON 31, MASS.

Branch Offices: New York ★ Cleveland ★ Chicago


NEW WAYS
TO USE PAPER BAGS FOR BETTER PACKAGING
VENDING MACHINE ICE
Tin Ties Make It Easier To "Take Home A Bagful!"
Consumer-unit kraft ice bag, with fool-proof tin-tie closure, is giving added impetus to mounting sales of manufactured ice via vending machines. Duplex bag is both wet strength, retaining 50 per cent of original strength when completely saturated, and water repellent, lowering water absorbency and penetration through the paper. Good printing qualities contribute to brand merchandising.
FLOWER BULBS
Mesh Window Bag for Hard-to-Package Item
New application for Union's versatile VENT-VU bag is consumer-unit packaging of gladiolus and other bulbs. Colorful new package stimulates merchandising opportunities, adds shopping convenience. Mesh window means easy ventilation, longer life for bulbs; quick visibility for sales impact. Growers report bag increasing both unit sale and total volume.
SHOPPERS' CARRY-ALL
Streamlined Handle Bag Saves Small-Purchase Deliveries
PIKUP, compact and sturdy all-kraft carrier, provides department and specialty stores with attractive low-cost bag that is incentive to shoppers to "take" small purchases. May be color-printed with store identification and promotional copy; can be produced in convenient, individualized sizes. Sketches, samples available.
VARIETY STORES
Window Bag Makes Low Cost Package
Inexpensive variety store merchandise can be color-fully packaged in window bags of cellophane and kraft paper at extremely low cost. Bags provide protection, brand identification, ample area for sales copy, good product visibility. Easy to store, fill, ship. Variety of sizes and shapes, capacity to five lbs. Name your product and we'll send sample bags for experimentation.
Odds are, your most efficient low-cost packaging mediu
can be a paper bag.
TRADE MARK
UNION
UNION BAG & PAPER CORPORATION
WOOLWORTH BUILDING • NEW YORK 7, NEW YORK

Custom Protection—prevents shipping damage as no other packaging method known!

How often do *your* products arrive at their destinations scratched, cut or damaged in any way? Once a year — once a month — or oftener? If you had a single instance of damage in transit last year, it may be time to change to *custom protection* with Kimberly-Clark Interior Packaging — KIMPAK*. Companies like the Speed-Queen Corporation who revised and streamlined their packaging operations have found that nothing else protects so efficiently, so economically.

KIMPAK is soft, grit-free, easy to apply as wrapping paper. It will absorb up to 16 times its own weight in moisture within 30 seconds — protect against shock, scratching, pressmarking, vibration. KIMPAK is feather-light, yet gives more protection than most materials of far greater weight and density. Many concerns have found this an important factor in reducing the size and weight of their packages, due to recent postal rate increases.

Regardless of the product you manufacture, KIMPAK — in its many specifications — can be "tailored" to fit your particular needs. Today — investigate *custom protection* with KIMPAK. For complete information, write to Dept. L-6, Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMPAK INTERIOR PACKAGING

*T. M. REG. U. S. & FOREIGN COUNTRIES

A Product of **Kimberly-Clark**

For clean, high-gloss printing on *Glassine*

and other specialty papers

use this famous combination

...the 100% *dyestuff* ink that produces clean, sparkling impressions on both transparent and opaque glassine. Use TRANSLUSTRO INK on any aniline-type press—with or without metered inking rolls—for high quality results at minimum cost. TRANSLUSTRO INK is economical in use because it gives greater coverage per pound than any other type of aniline ink, permits almost continual press operation without interruption for wash-ups. It dries fast at high press speeds . . . has strong adhesion and excellent rub resistance . . . will not chip or crack. Available in a full range of eye-appealing colors—or special shades to match your samples.

TRANSLUSTRO INK also may be obtained in tailor-made formulations to withstand hot-waxing. And, for highly humid conditions, remember to use BBD's special* Humidity-Fast *TRANSLUSTRO INK.

BBD "SHIRT-SLEEVE" SERVICE

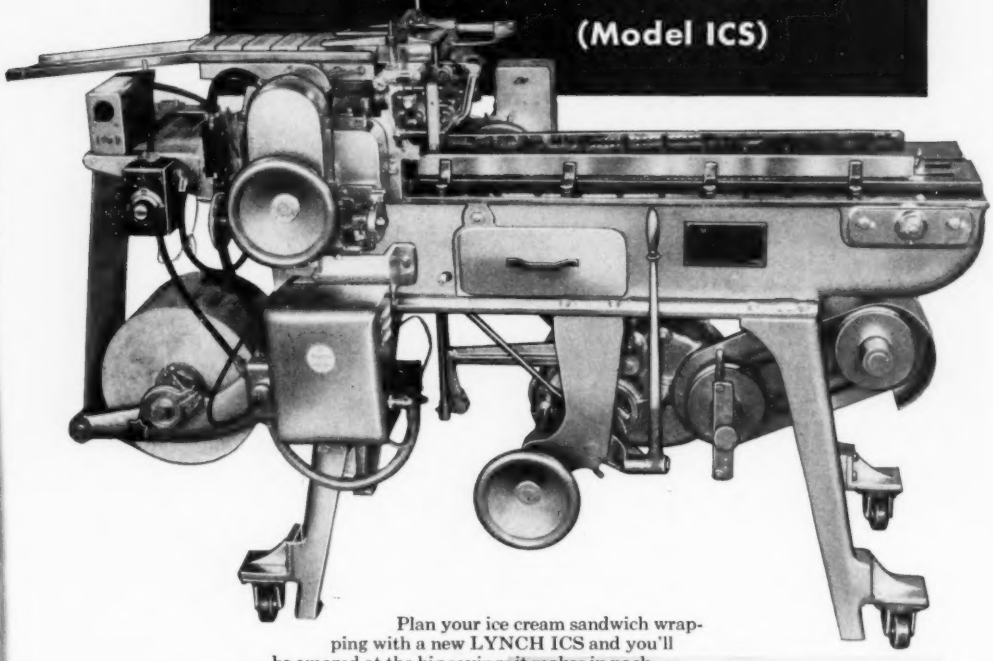
When it's an aniline ink problem . . . call for an aniline ink *specialist* to solve it. The BBD-man in your locality has a background of practical pressroom experience that may prove invaluable to you when he rolls up his sleeves to tackle your problem right on the press.

For FREE "TRANSLUSTRO INK COLOR GUIDE" contact your nearest BBD office . . . or write on your company letterhead to BENSING BROS. & DEENEY, 3301 Hunting Park Avenue, Philadelphia 29, Pa.

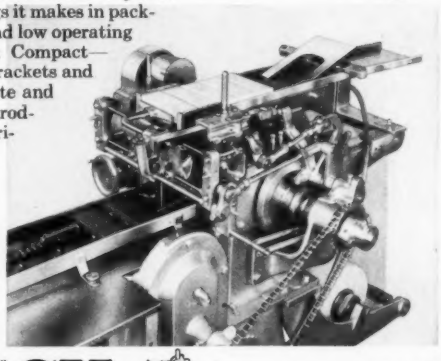
Bensing Bros. and Deeney
SALES COMPANY
World's Largest Makers of Aniline Ink
PHILADELPHIA • CHICAGO • WAKEFIELD, MASS.
Pacific Coast: A. M. BOJANOWER, Los Angeles
Export: McLAURIN-JONES CO., New York
Canada: MANTON BROS., Toronto

LYNCH *Announces*

the new ICE CREAM SANDWICH WRAPPING MACHINE (Model ICS)



Plan your ice cream sandwich wrapping with a new LYNCH ICS and you'll be amazed at the big savings it makes in packaging costs. With low initial price and low operating cost, it gives you these desirable features: Compact—requiring little space; Portable-mounted on brackets and casters; Easy to clean and sterilize, meeting State and Federal sanitation requirements (metals contacting product are stainless); No product—no paper feed; Variable speed drive wrapping 30 to 120 packages per minute. Standard equipment includes heat seal (no glue), wrap register unit with electric eye and ½ H.P. moisture-proof motor. For more details about LYNCH ICS write or call the Packaging Machine Sales Dept.



Feeding, Wrapping and Sealing Unit.

PAR AIR COMPRESSORS

PAR REFRIGERATION COMPRESSORS

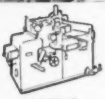
WRAP-O-MATIC CANDY & COOKIE WRAPPING MACHINES

LYNCH CORPORATION

PACKAGING MACHINE DIVISION

TOLEDO, OHIO

BRANCHES: NEW YORK • CHICAGO
SAN FRANCISCO • ATLANTA



MORPAC PAPER PACKAGING MACHINES

MORPAC BUTTER & OLEO PACKAGING MACHINES

GLASS FORMING MACHINES

Shall we have the deep freeze ready, dear?

Whether it's hunting or fishing, golf or tennis, sports are a major source of recreation and relaxation for millions of Americans. In serving the needs of these enthusiasts, the Sporting Goods Industry makes a vital contribution to the health and happiness of the nation.

For the sportsman, his gear and equipment often hold as much appeal as woods, stream or athletic field. Part of the thrill is poring over catalogues and brochures for new items and suggestions.

Here is another striking example of how printing helps make modern living more enjoyable — and helps build sales for manufacturers and dealers.

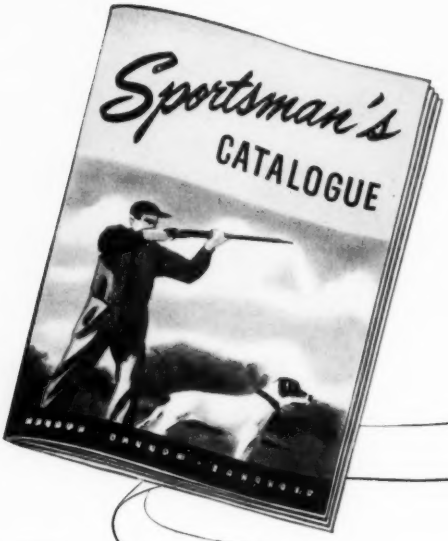
Oxford papers can add realism and sales appeal to your selling-in-print by assuring finer, more faithful reproduction. You will find Oxford grades ideally suited for folders, catalogues, labels, wraps and many other forms of promotional material . . . each designed to do a more effective, more economical job.

OXFORD PAPERS
Help Build Sales

OXFORD PAPER COMPANY
230 Park Avenue, New York 17, N. Y.

OXFORD MIAMI PAPER COMPANY
35 East Wacker Drive, Chicago 1, Ill.

Mills at Rumford, Maine, and West Carrollton, Ohio



OXFORD PAPERS
Help Build Sales

Because fine printing plays an important role in promoting sales for your products, we urge you to discover how much Oxford Papers can add to your selling-in-print. Whether your next promotion calls for letterpress, offset or rotogravure, you can rely on Oxford Papers for finest results. You can rely, too, on your Oxford Merchant for dependable service and expert advice on the selection of proper weights and grades.

IT PAYS TO ASK FOR — AND USE THESE FINE OXFORD AND OXFORD MIAMI PAPERS

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Polar Superfine Enamel
Maineflex Enamel
Maineflex Enamel Cover
Maineflex Enamel, Coated One Side
Mainefold Enamel
Mainefold Enamel Cover
North Star Dull Enamel
Seal Enamel
Engravatone Coated
Coated Publication Text

UNCOATED PAPERS

Carfax English Finish
Carfax Super
Carfax Eggshell
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Wescar Gloss Plate Offset
English Finish Litho
Super Litho
Duplex Label

Nation-wide Service Through Oxford Merchants

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Bradner, Smith & Co.
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The Whitaker Paper Co.
Cleveland, Ohio . . . . . The Cleveland Paper Co.
Columbus, Ohio . . . . . Scioto Paper Co.
Dayton, Ohio . . . . . Cincinnati Cordage Co.
The Whitaker Paper Co.
Des Moines, Iowa . . . Bermingham & Prosser Co.
Detroit, Mich. . . . . Chope Stevens Paper Co.
Fresno, Calif. . . . . Blake, Moffitt & Towne
Hartford, Conn. . . . Green & Low Paper Co., Inc.
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Jacksonville, Fla. . . . . Jacksonville Paper Co.
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Lincoln, Neb. . . . . Western Newspaper Union
Little Rock, Ark. . . . . Roach Paper Co.
Long Beach, Calif. . . . . Blake, Moffitt & Towne
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(Div. of Carter, Rice & Co. Corp.)

OXFORD PAPER COMPANY, *230 Park Avenue, New York 17, N. Y.*

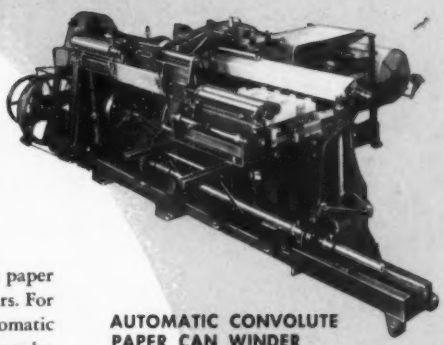
OXFORD MIAMI PAPER COMPANY, *35 East Wacker Drive, Chicago 1, Ill.*

MILLS AT RUMFORD, MAINE, AND WEST CARROLLTON, OHIO

STRONG, DURABLE
Paper Wound Cans *Save* Money and Metal

s all-purpose containers, Knowlton Convolute Wound paper cans have distinct cost-saving advantages.

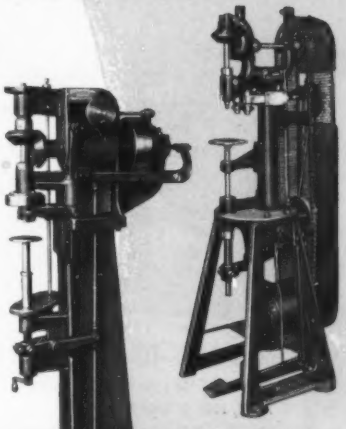
Paper wound cans are tough and strong, and require metal only for tops and bottoms. They can be made in a wide variety of sizes as well as a number of attractive shapes and designs. Let us supply you with some facts and production costs and capacity of Automatic Convolute Winders.



AUTOMATIC CONVOLUTE PAPER CAN WINDER

SEAMERS

Trim, tight attachment of tin tops and bottoms to paper can bodies can be assured by using Knowlton Seamers. For round paper cans, the two-roll round, semi-automatic Seamer No. 1 with Automatic Clutch, and for irregular shaped bodies, the two-roll semi-automatic Seamer No. 3 does the job. Light, medium or heavy-ply thickness fibre can bodies can be seamed by either machine. Let us send you detailed folder that describes how you can obtain large, economical output from these Seamers.



NO. 1 SEAMER with Automatic Clutch

NO. 3 SEAMER

KNOWLTON LOW-COST PRODUCTION EQUIPMENT

SET-UP BOX
- Single and Double Scorers
- Single and Double Rotary Creasers and Cutters
- Single and Double Corner Cutters
- Single Stayers (All Sizes)
- Universal Coverers, Power (All Sizes)
- Hand Power Coverers (All Sizes)
- Bench Coverers
- Toppers (All Sizes)
- Slitters and Rewinders
- Flange Benders (Automatic)
- Glue Pots

PAPER TUBE & CAN
- Automatic Convolute Paper Can Winders
- Spiral Winder (Light & Heavy Wall)
- Spiral Cut-offs
- Tube Recutters
- Lap Tube Rollers

SHIPPING CONTAINER
- Heavy Vertical Slotters
- Heavy Bar Creasers
- Paraffine Coaters

GUMMED STAY PAPERS
- Gray, Brown and White
- Thermo Plastic Stay

BOSTON 827 Massachusetts Ave. (ARLINGTON)

M. D. Knowlton COMPANY

BROOKLYN 45-53 Beaver St. CHICAGO 9 S. Clinton St. TORONTO, CAN. 260 Richmond St. W.

Pacific Coast Representatives H. W. BRINTNALL CO. Los Angeles, San Francisco

ROCHESTER, NEW YORK

HOW WOULD EMBOSSED FOIL SEALS LOOK?

The sketches we design give a perfect picture of how much beauty and dignity foil seals add to the products, anniversary, convention or similar events. How would embossed foil seals look? It's so easy to find out . . . FREE! with the coupon below.

IT'S EASY TO FIND OUT *FREE!*

How would foil seals look? On products, letterhead, labels, seals or booklet

Please send me a sketch on ☐ GOLD ☐ SILVER foil approx. size.....with the following copy

.....

.....

My Name.....

Company.....

Address.....City.....

Approx. Quantity.....

Designers and Producers of Fine Labels

Labelsmiths

*GUMMED or UNGUMMED • HEAT SEAL
PRESSURE SENSITIVE *ALL AT LOWEST PRICES*

a. m. steigerwald company

910 W. VAN BUREN ST., CHICAGO 7, ILL. TAYLOR 9-5400

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The same offer is good for other types of Labels

CLEVELAND	DANVILLE, ILL.	LOUISVILLE	MEMPHIS	MINNEAPOLIS	NEW YORK, N. Y.	OAKLAND	ST. LOUIS
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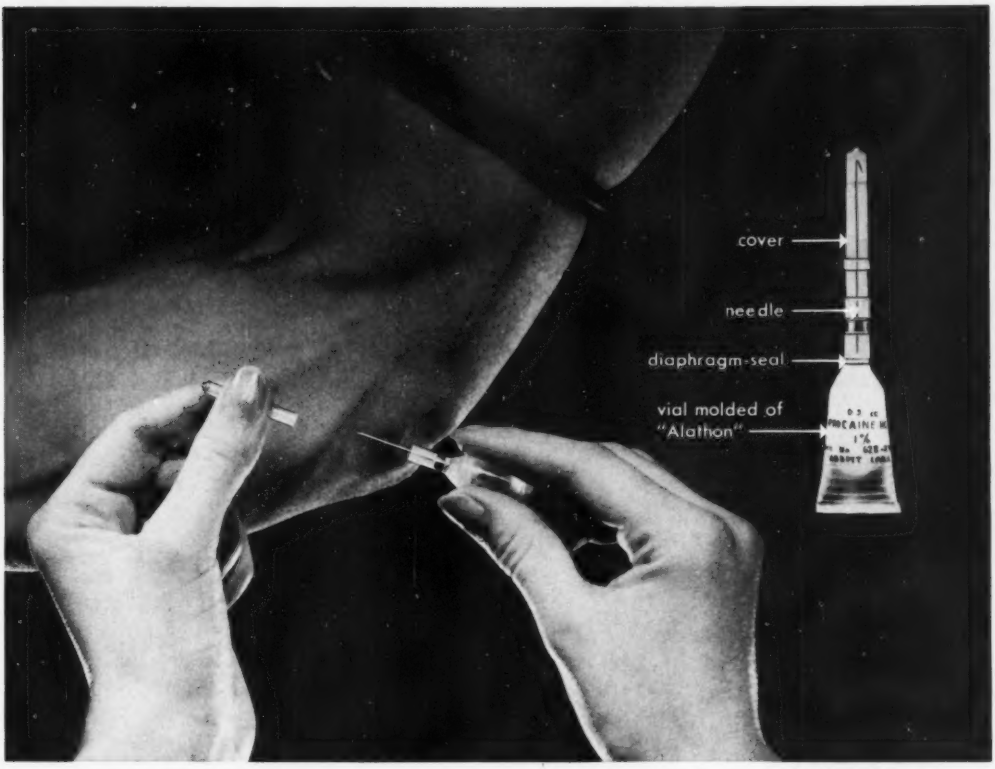
CHerry 1-2468	DAnville 4447J	WAbash 1257	MEmphis 8-2574	LOcust 5309	MOnument 2-0237	TEmplebar 2-1745	GArfield 0741



New disposable hypodermic syringe has vial molded of Du Pont "ALATHON"

It's another packaging improvement made possible by the outstanding properties of "Alathon"

This new disposable syringe, the "Hypovial," is now used to give local anaesthetic to blood donors before use of the blood-receiving needle. It features the proper anaesthetic dosage and a needle in one handy, lightweight unit . . . packaged and sterilized *before* delivery. The one-piece syringe vial is injection-molded of Du Pont "Alathon"* polythene resin—complete with a diaphragm seal. To use the syringe, the needle cover is depressed, forcing the bottom of the needle through the seal. Then the cover is removed, and the needle is inserted in the donor's arm. Simple finger pressure on the vial injects the anaesthetic. The entire syringe is then discarded.

"Alathon" is used because of its unique combination of properties. It is readily molded into intricate shapes. "Alathon" is lightweight, and its strength in thin sections means many low-cost units per pound. "Alathon" is odorless, tasteless, nontoxic . . . contains no plasticizer . . . is inert to most packaged goods at room temperatures. It will not break, crack, chip or peel. Packages of "Alathon" are easily heat-sealed . . . and they are squeezable.

"Alathon" is used for many different applications in the packaging industry. It is molded into a variety of closures and containers. It is widely used as a coating for paper wraps. And blended with waxes, "Alathon" improves the heat-sealing characteristics, appearance and scuff-resistance of waxed papers.

We suggest you investigate the properties of Du Pont "Alathon" for your future packaging applications. We'll gladly discuss the possibilities of improving your present packages or developing new ones. For full information write:

E. I. du Pont de Nemours & Co. (Inc.)
Polychemicals Department, District Offices:
350 Fifth Avenue, New York 1, New York
7 S. Dearborn Street, Chicago 3, Illinois
845 E. 60th Street, Los Angeles 1, California

*REG. U. S. PAT. OFF.

Molded by Quinn-Berry Corp., Erie, Pa., for Univial Corp., Rutherford, N. J. Complete package supplied by Abbott Laboratories, North Chicago, Ill. "Hypovial" is a trademark of the Univial Corporation.

DU PONT
REG. U.S. PAT. OFF.
150th Anniversary
Better Things for Better Living
. . . through Chemistry
Polychemicals
DEPARTMENT
PLASTICS • CHEMICALS

CECO

REG. U. S. PAT. OFF.

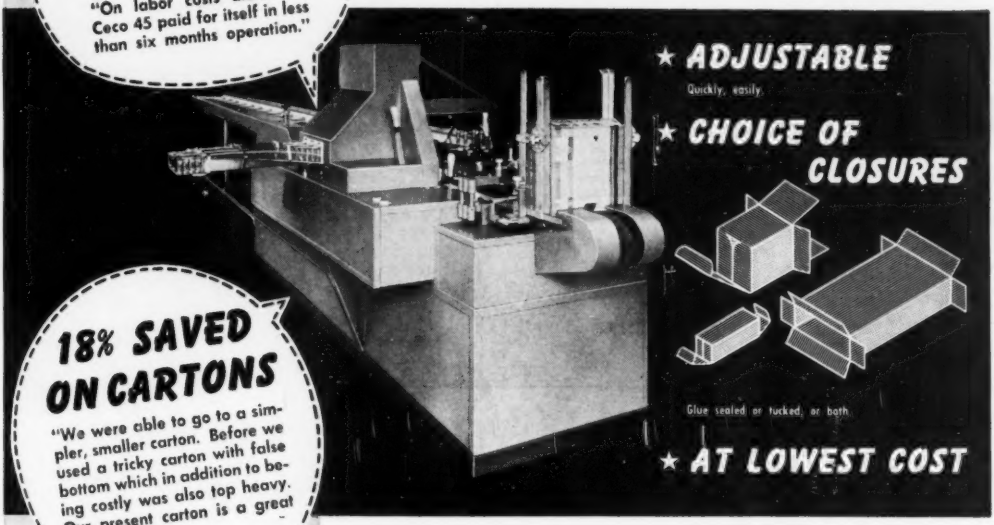
AUTOMATIC CARTONER

Pays for itself in 6 months out of LABOR SAVING alone

Here's how Lewis Howe Co., St. Louis, Mo., licked high packaging costs for Tums with a CECO Model 45 Cartoner. The company writes that their CECO not only paid for itself in six months by saving labor, but is earning extra profits by savings on cartons, cases, and floor space. Read their comments at the left.

59% SAVED ON LABOR

"On labor costs alone the Ceco 45 paid for itself in less than six months operation."



18% SAVED ON CARTONS

"We were able to go to a simpler, smaller carton. Before we used a tricky carton with false bottom which in addition to being costly was also top heavy. Our present carton is a great improvement."

Tums display package cartoned on CECO Model 45

Any size concern can now enjoy the economy of automatic cartoning with a CECO Model 45 Cartoner. This inexpensive machine is ideal for packaging bottles, tapes, bearings, soap, foods, machine parts, and other items either singly or in multiples. It is adjustable quickly without special tools by unskilled help for a wide range of carton sizes.

Various types of CECO Cartoners are available for quick delivery and at surprisingly low cost. They produce clean, neat, square packages that have greater sales appeal.

Tell us what you package, and let us show you what CECO can do for you without obligation. Write, wire or phone.

CONTAINER EQUIPMENT CORPORATION

CECO

REG. U. S. PAT. OFF.

Packaging Machinery Specialists

78-88 LOCUST AVENUE, BLOOMFIELD 2, N. J.

BOSTON • CHICAGO • DALLAS • JACKSON
SAN FRANCISCO • SAVANNAH • TORONTO

MEMBER, PACKAGING MACHINERY MANUFACTURERS INSTITUTE

Dozens of products take on the holiday spirit in Milprint's gay Pliofilm Christmas stocking . . . one of many stock designs available in bags, overwraps and bands.

Milprint Rotogravure printed Cellophane tray overwrap for profitable multi-unit packaging.

wrap up bigger Holiday sales

with Milprint Christmas Packages!

When it *looks* like a gift, it attracts more shopper attention and sells faster! So whether your product is for everyday use or in the luxury class—or even if it's not ordinarily considered a gift item at all—boost your holiday sales with colorful Milprint Christmas packaging!

Milprint, with its wide variety of packaging materials and printing processes, is your best source for both custom-designed and a wide choice of stock design holiday packaging. Prepare now for your biggest holiday season ever! Call your Milprint man—*first!*

Printed Cellophane, Pliofilm, Polyethylene, Acetate, Glassine, Foils, Folding Cartons, Bags, Lithographed Displays, Printed Promotional Material

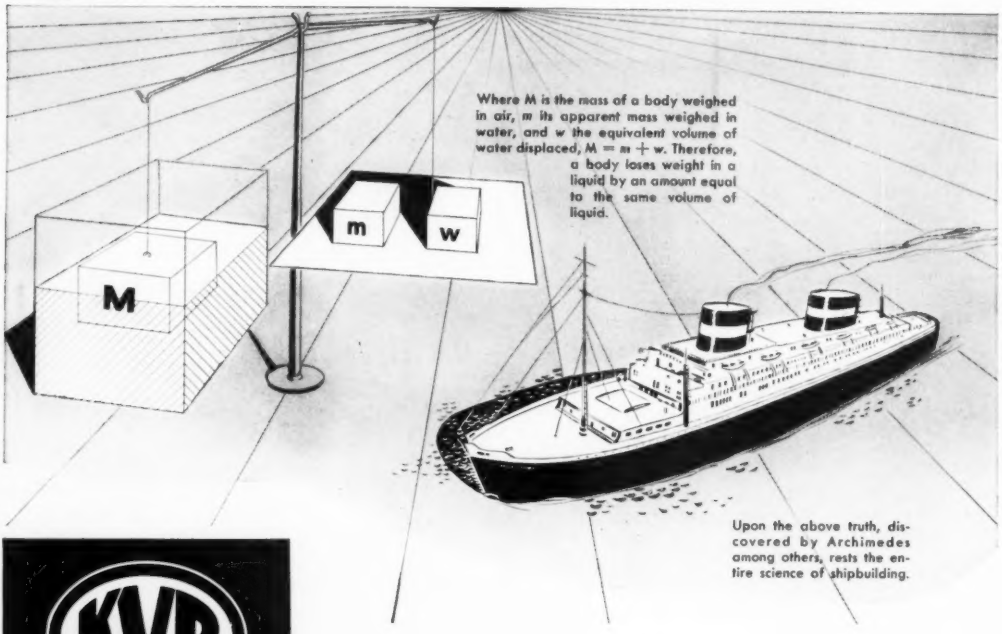
Milprint lithographed Christmas cartons mean increased display prominence.

Milprint INC.
PACKAGING MATERIALS
LITHOGRAPHY & PRINTING

General Offices, Milwaukee, Wisc.,
Sales Offices in Principal Cities.

This insert printed by Milprint.

Reverse printed Cellophane overwrap sparks impulse sales.



PAPERS for the FOOD INDUSTRY

THE FOOD industry long ago discovered that properly engineered paper is a useful servant. It not only preserves the cleanliness and flavor of foods . . . in many instances it also sharply stimulates sales through appealing designs.

For years KVP has specialized in producing papers for the food industry . . . tough for protection at all times, colorful for selling at the right time.

KALAMAZOO VEGETABLE PARCHMENT CO.

PARCHMENT, MICHIGAN

ASSOCIATED COMPANIES:

KALAMAZOO VEGETABLE PARCHMENT CO.
DEVON, PENNSYLVANIA

KVP COMPANY OF TEXAS
HOUSTON, TEXAS

HARVEY PAPER PRODUCTS CO.
STURGIS, MICHIGAN

IN CANADA:

THE KVP COMPANY LIMITED
ESPANOLA, ONTARIO

APPLEFORD PAPER PRODUCTS LIMITED
HAMILTON, ONTARIO
MONTREAL, QUEBEC

INDUSTRIES SERVED

BAKING
Bread — Cracker
Cereal

MEAT
Packing — Locker
Retail

DAIRY
Butter — Cream — Cheese
Ice Cream — Milk

FISH • FRUIT • FROZEN FOODS
POULTRY • SHORTENING • VEGETABLE

To men dissatisfied with their packages

If your present package is not delivering all you want in the way of merchandising and product protection, let us tell you what you can do with packaging materials plasticized with Monsanto Santicizer 141, Santicizer E-15 or Santicizer B-16.

These plasticizers have been accepted as nontoxic by the Bureau of Animal Industry of the United States Department of Agriculture. That means that they are safe to use in packages for foods.

Santicizers 141, E-15 and B-16 are compatible with a variety of resins used to make packaging film, including polyvinyl chloride and copolymers, cellulosic resins, rubber-based resins—in fact nearly all commercially available film-forming materials.

By choosing from these plasticizers, you can achieve packages that are clear, odorless, tasteless . . . that are strong and tough . . . that resist moisture and retain flexibility at low temperature.

For data on these and other Monsanto Plasticizers, and for technical assistance, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

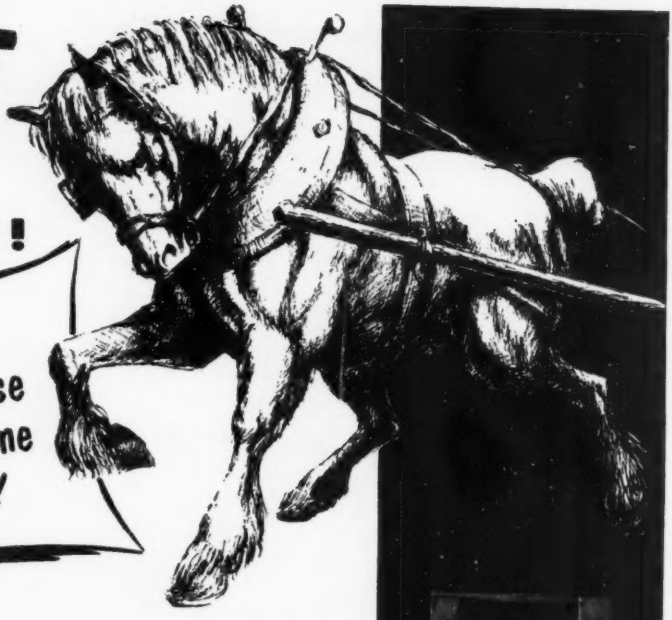
Santicizer: Reg. U. S. Pat. Off.

SANTICIZER

MONSANTO
CHEMICALS – PLASTICS

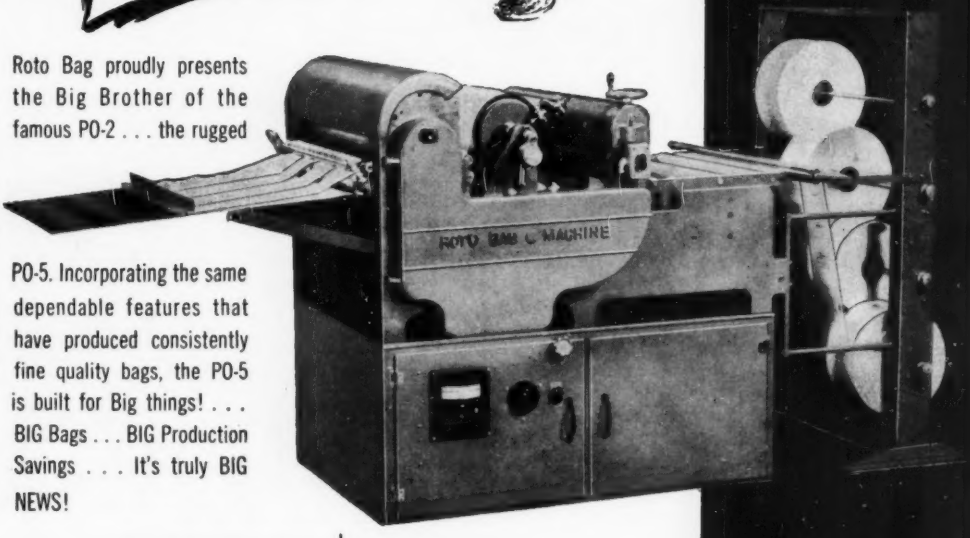
SERVING INDUSTRY . . . WHICH SERVES MANKIND

BUILT FOR THE JOB!



Here is the BIG Workhorse of Polyethylene Bagmakers!

Roto Bag proudly presents the Big Brother of the famous PO-2 . . . the rugged PO-5. Incorporating the same dependable features that have produced consistently fine quality bags, the PO-5 is built for Big things! . . . BIG Bags . . . BIG Production Savings . . . It's truly BIG NEWS!



makes 'em BIG...

Perfect for Drumliners, the PO-5 makes bags from tubing from 0" — 27" wide, and up to 60" long. Complete automatic delivery and stacking of giant bags at rates up to 50 per minute.

makes 'em SMALL

Equipped to handle multiple widths — as many as four rolls simultaneously within stated size ranges thereby obtaining exceptional production rates.

For Specifications On The PO-5 And Other Bag Machines Write:

Roto Bag
MACHINE CORP.
130 EAST 13th STREET,
NEW YORK 3, N. Y.

Like an orange peel...

a fine tube...

protects quality

Many of America's leading manufacturers
protect product quality... economically...
in **ALCOA** Aluminum Tubes

ALUMINUM COMPANY OF AMERICA 1752-F GULF BUILDING PITTSBURGH 19, PA.

RETARD RANCIDITY

...with tailor-made Riegel papers

A few things RIEGEL can do for you . . .

- Keep products dry
- Keep products moist
- Retard rancidity
- Seal with heat or glue
- Provide wet strength
- Stop grease penetration
- Retain aromas, flavors
- Resist extreme cold
- Reduce breakage
- Prevent sifting
- Protect from light
- Resist alkalis
- Resist corrosion
- Boost machine efficiency

RANCIDITY is a common problem for many products that contain natural oils or that are cooked in oil. It is a problem Riegel has solved for many different products such as potato chips, peanuts and prepared flours. A paper that is right for one product is not always right for another. In one case the answer may be a simple waxed paper . . . in another it may be a triple lamination of foil and special glassines. Whatever is needed, Riegel can usually tailor-make the right paper . . . quickly, efficiently, economically. Just tell us what you want paper to do for you. Write for more information to *Riegel Paper Corporation, P.O. Box 170, Grand Central Station, New York 17, N. Y.*

Riegel FUNCTIONAL PAPERS FOR PROTECTIVE PACKAGING

- WRITE FOR SAMPLE BOOK

Pneumatic's 1952 Packaging Review — Every one of these famous products is packaged by Pneumatic equipment . . . world renowned for "lower cost per container" operation.

PNEUMATIC SCALE CORP., LTD., 82 Newport Avenue, Quincy 71, Mass. *Also New York; Chicago; San Francisco; Los Angeles; Seattle and Leeds, England.*

PNEUMATIC

Packaging and Bottling Equipment

OVER 100 DIFFERENT MACHINES FOR AUTOMATIC PRODUCTION

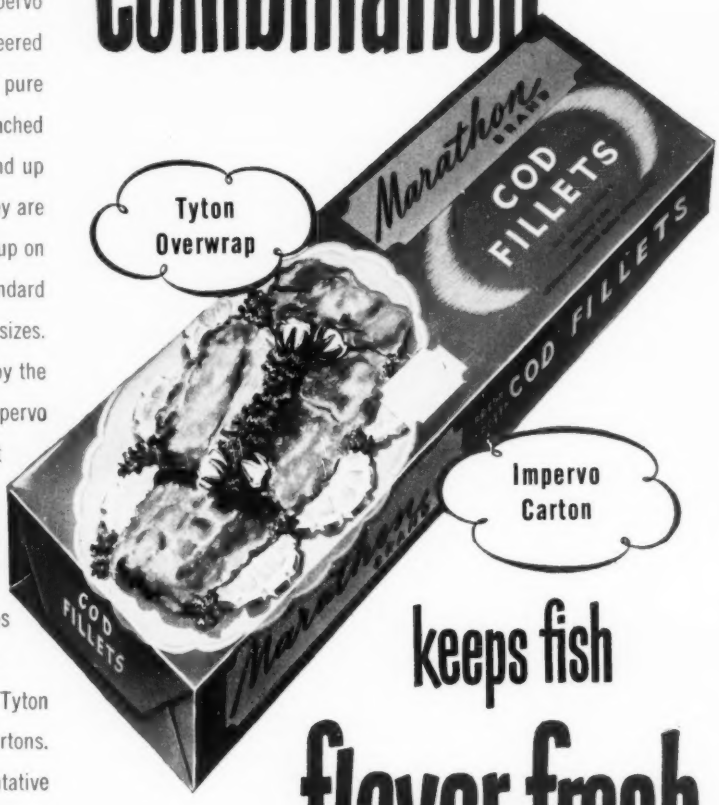
Perfect packaging combination

Marathon's famous Impervo Cartons and Tyton Overwraps make the perfect combination for frozen fish packaging. They preserve that essential "fresh-caught" flavor and freshness for months.

Tyton Overwraps sing of quality and freshness. Marathon's Impervo cartons are specially engineered for fish and seafoods. Made of pure white, heavy waxed, bleached paperboard, these cartons stand up under rough handling. They are pre-glued for quick set-up on the packing line . . . come in standard consumer and institutional sizes.

Best of all, when opened by the housewife, the clean, white, Impervo carton makes your product that much more attractive .... maintains your reputation for a quality pack.

Check the profit possibilities of Marathon's perfect combination for frozen fish—Tyton Overwraps and Impervo Cartons. See your Marathon representative or write Marathon Corporation, Menasha, Wisconsin.



keeps fish flavor fresh

Marathon

packaging that sells food

"'Tailored Tapes' speed bag and package sealing! New folder shows how"

A CRISP, NEAT, "quality" look for your product is easy with a tight, transparent seal of "SCOTCH" Cellophane Tape. This universal favorite sticks at a touch, needs no moistening.

LOCKER PAPERS require a tape with a tougher, more aggressive adhesive to seal them properly. "SCOTCH" Acetate Fibre Tape No. 710 and paper-backed No. 245 were specially developed for this exacting job.

TREATED BAGS and packages (coffee bags, meat wrappers) call for an extremely high-tack tape that will hold under changes in temperature and humidity. For this job it's "SCOTCH" Cellophane Tape No. 610 or Acetate Fibre Tape No. 710!

DECORATIVE PACKAGING is the specialty of "SCOTCH" Cellophane and Acetate Fibre Tapes in 12 standard colors. Tapes to match any color you desire can be made up on special order at reasonable cost.

THE RIGHT MACHINE for applying tapes means dollars saved on the production line. Specialized dispensers and automatic machinery to fit any packaging need can be found in the complete "SCOTCH" Brand line.

SEND FOR THIS FREE LITERATURE . . . it shows how you too can simplify your sealing operation, turn out good-looking packages at minimum cost using "SCOTCH" Pressure-Sensitive Tapes. Tells what tapes will do your job best, what taping machinery is best suited to your requirements.

The coupon below will bring your free copy of this useful, informative folder . . . send it in today!

Minnesota Mining & Mfg. Co. Dept. MP62
St. Paul 6, Minn.

☐ Please rush copy of manual on Bag and Package Sealing. ☐ Have a representative call.

Name.....

Title.....

Firm.....

Address.....

City.....Zone....State.....

Come and get it!

He may be bragging a bit about his salad-making ability . . . but that bottle of White House Vinegar* is a sign that he knows his salad dressings. White House Vinegar gives salads and lots of other foods a flavor that makes for mighty good eating.

White House Vinegar and the other products shown below are sealed with Crown Screw Caps. These closures have the famous Deep Hook Thread which produces greater sealing pressure with any given amount of application force yet spins on easily and can be removed without trouble. The liners in the closures have been laboratory tested to determine their suitability for each individual product. Crown Cork & Seal Company, Baltimore 3, Maryland. *World's Largest Makers of Metal Closures.*

*White House Pure Apple products come from "the heart of the Appalachians." They are manufactured by the National Fruit Products Co., Winchester, Virginia. Twelve Oaks Vinegar is made by the same company in plants at Atlanta, Georgia as well as Waynesboro, Virginia.

CROWN CLOSURES

Approved by millions of housewives

SYLVANIA CELLOPHANE

Sylvania Cellophane MS-5 in the 300 gauge is the wrap used in this roll package.

"Exactly what are the unusual *sales-building* benefits offered by Sylvania Cellophane?" bakers of brown 'n' serve rolls and biscuits asked us.

"It is *moisture-resistant*," we said. "It safeguards quality from your hands to the customer's table. It *beautifies packaging*—crystal-clear transparency permits immediate identification of your product. It *protects freshness and flavor*—prevents infiltration of dust, dirt and harmful vapors — discourages pilfering, tampering, excessive handling." Sylvania Cellophane gives you a *combination* of benefits that helps your product sell faster—makes your packaging dollar go further.

Perhaps you can extend your present supply of cellophane, either through improved package design or the use of a different type or gauge.

For information, write our Market Development Department.

SYLVANIA DIVISION AMERICAN VISCOSE CORPORATION

SYLVANIA CELLOPHANE

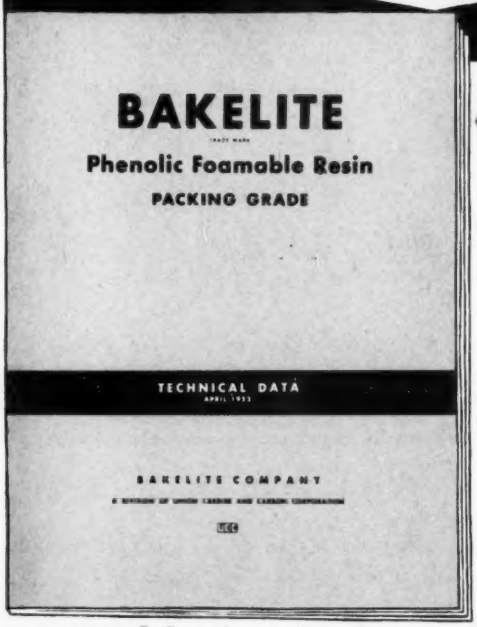
General Sales Office:
1617 Pennsylvania Blvd.,
Philadelphia 3, Pa.

Get the facts about this NEW Packaging Material...

BAKELITE PHENOLIC FOAMABLE RESIN

Substantial Savings in Shipping Costs

Less Breakage of Fragile Items



send for this booklet!

Here's the booklet that tells how you can have lighter packages that save on shipping costs—faster packing that saves time—greater protection that saves on breakage! You'll get these advantages from an entirely new packaging material—BAKELITE Phenolic Foamable Resin!

The resin is supplied as a liquid. It is converted, by a specially developed technique, into foam that expands 200 times its original volume. The foam weighs only 1/3 lb. per cu. ft.—about one-tenth the normal packing weight of the dunnage materials most commonly used. Articles can be packed simply by pushing them into a solid block of the spongy foam. They are firmly cushioned by a cellular structure that is resilient even when compressed.

Besides giving the facts about the new material, this free booklet also includes a Postal Savings Comparator that shows the average savings made possible by the use of BAKELITE Phenolic Foamable Resin on shipments to each of the postal zones. Mail the coupon for your copy now!

send for it today!

Dept. EA-30, Bakelite Company
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.
Please send me a free copy of the new booklet,
E19, BAKELITE Phenolic Foamable Resin.

*Name*_____ *Title*_____

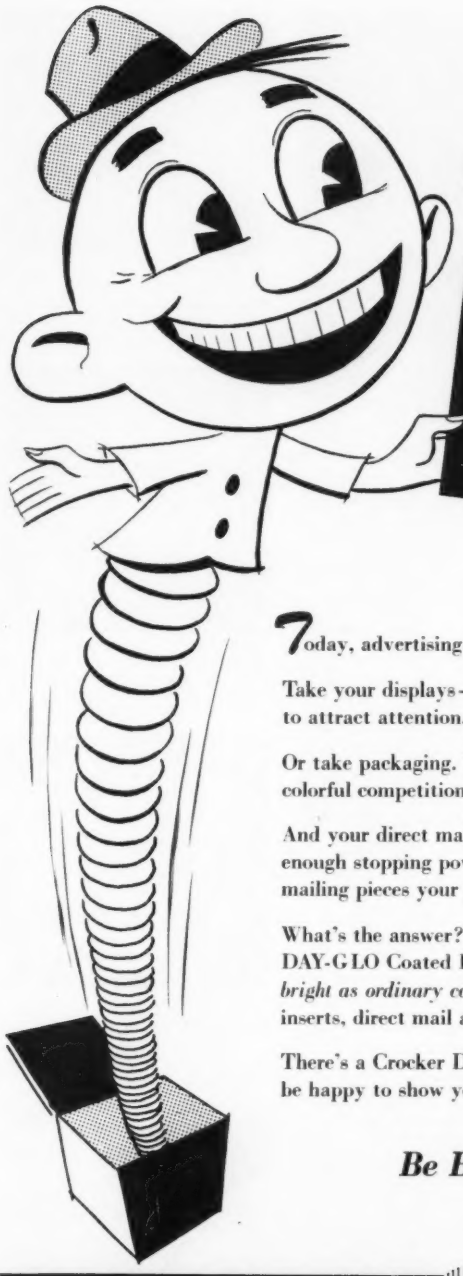
*Company*_____

*Street*_____ *City*_____ *Zone*____ *State*_____

BAKELITE
TRADE MARK
PHENOLIC RESINS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.
In Canada:
Bakelite Company (Canada) Ltd., Belleville, Ont.



Make Your Advertising Jump with

Crocker DAY-GLO® Coated Papers!

Today, advertising has to have action—selling action, that is!

Take your displays—for example. They have three seconds to attract attention, get appraisal and win approval.

Or take packaging. It must reach roving eyes, overwhelm its colorful competition, make shoppers stop and look and buy.

And your direct mail. It has to have enough eye appeal, enough stopping power, to stand out from all the other mailing pieces your prospects get.

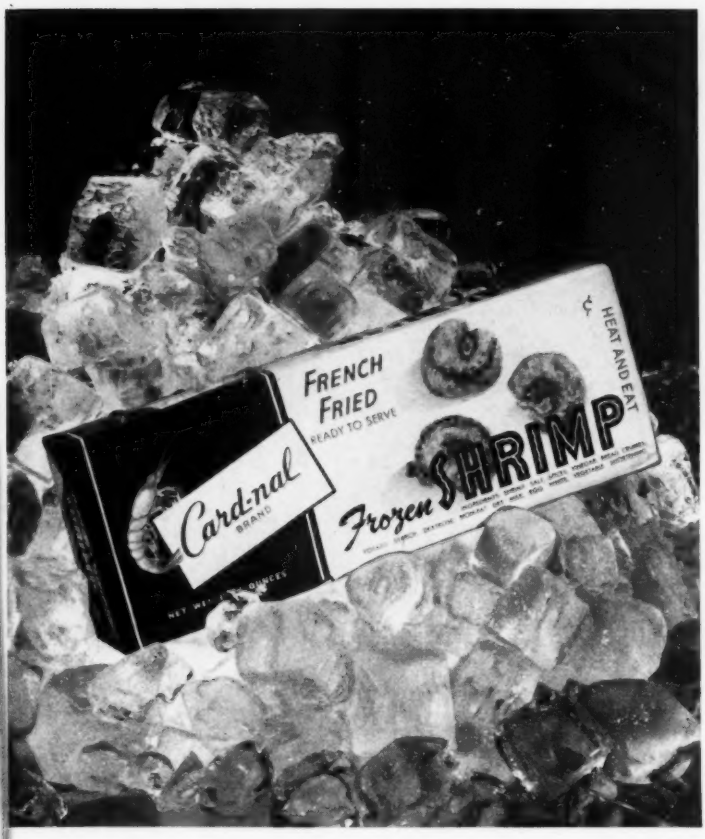
What's the answer? All you have to remember is this—Crocker DAY-GLO Coated Papers, *because their colors are four times as bright as ordinary colors*, will make your labels, packages, inserts, direct mail and displays pack four times the punch!

There's a Crocker DAY-GLO Paper merchant near you. He'll be happy to show you how to make your advertising *really jump.*

***Be Bright—use* DAY-GLO®**

CROCKER, BURBANK PAPERS
INCORPORATED
FITCHBURG • MASSACHUSETTS

SWITZER BROTHERS, INC.
4732 ST. CLAIR AVENUE
CLEVELAND 3, OHIO



Flavor Freezer!

Designed and produced by Milprint, Inc., for Card-nal frozen shrimp, containers made from Kaiser Aluminum Foil give all these benefits:

Better Flavor—Non-porous Kaiser Aluminum Foil prevents loss of flavor through dehydration, insures longer shelf life. And aluminum foil imparts no flavor.

Increased Sales—Kaiser Aluminum Foil gives extra eye-appeal to Card-nal brand frozen food packages. They keep their strength and good appearance whether wet or dry—never become soggy or unsightly.

Faster Production—Excellent cold transfer characteristics of Kaiser Aluminum Foil make faster freezing possible. And aluminum foil takes a durable heat seal quickly and easily.

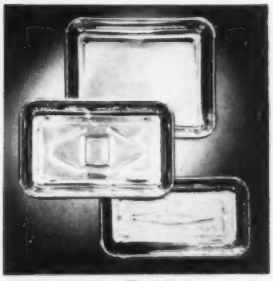
Although most Kaiser Aluminum today goes to meet the needs of the national security program, you can *plan now* to give the many advantages of aluminum foil to your customers. For Kaiser Aluminum is expanding facilities to increase its production of primary aluminum 137%.

Call any office for complete information and current availability. 65 Kaiser Aluminum offices and warehouse distributors in principal cities. Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, California.

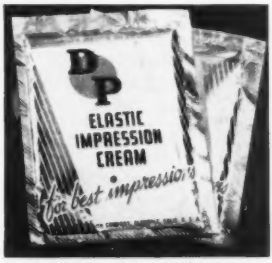
Kaiser Aluminum

Setting the pace . . . through quality and service

RATION PROTECTOR—Kaiser Aluminum Foil is widely used as a moisture and vapor barrier for hygroscopic military rations like dehydrated coffee and milk.



SALES BUILDER—Enchiladas can be heated right in these disposable trays made from Kaiser Aluminum Foil. Result: doubled sales for XLNT Spanish Foods Company.



COST CUTTER—Rolls of Kaiser Aluminum Foil permit fast, low-cost machine fabrication of pouches made by Dental Perfection Co., Inc., to protect impression material for dentures.

TOOL SAVER—Ductility of Kaiser Aluminum Foil makes it easy to shape around tools, machinery . . . protects against moisture, corrosion.

DESICCITE

Approved Desiccant for your Method II Military Packaging under MIL-D-3464

1. Desiccite*#25 is now lower in price, volume and weight.
2. MIL-D-3464 now supersedes JAN-D-169 and AN-D-6c on Packaging Desiccants.
3. MIL-D-3464 authorizes the purchase and use of desiccants in unit size bags instead of in pounds and ounces.
4. MIL-D-3464 eliminates all misleading Grade designations such as A and B.
5. MIL-D-3464 eliminates all chemical names of desiccants such as silica gel.
6. For a complete summary of all important points concerning the new specification MIL-D-3464, mail this coupon today.

Please send me new literature on specification MIL-D-3464
Filtrol Corporation, Desiccant Division,
727 West 7th Street, Los Angeles 17, California.

NAME _____

TITLE _____

STREET _____

CITY _____ ZONE _____ STATE _____

Filtrol* CORPORATION

Distributors located in principal cities throughout U. S. A. and Canada

*T. M. Reg. U. S. Pat. Off.

Successful food merchandising is brand merchandising

Waxed Paper

helps sell *your* product...at a *greater* profit!

BETTER BRAND IDENTIFICATION AT LOW COST... Waxed paper packaging ties in with your advertising and promotion at the point-of-sale, makes *your brand* stand out on the shelf. And the protective qualities of economical waxed paper give you a *convincing* reason-why story on product freshness for your advertising, too.

APPETITE APPEAL: Proper design and the use of effective colors, makes waxed paper packaging a superior salesman at putting over the impression of appetizing freshness and flavor. And you can print your flavor and freshness story right on the package!

CONSUMER ACCEPTANCE: Millions of housewives use waxed paper every day, to protect and preserve unused portions of food. Their confidence in waxed paper is clearly shown by the vast quantities they use, and by their increasing demand for products in waxed paper packaging.

IMPORTANT SAVINGS! With rising costs squeezing profits, right now is the time to consider the selling advantages, and savings, you can effect *only* with waxed paper packaging. Costing less, yet offering you more merchandising opportunities than any other packaging material, waxed paper is your best packaging buy . . . the modern way to sell *more* of your products at a *greater* profit.

Waxed paper gives you all these advantages, too!

1. Protects freshness.
2. Protects flavor.
3. Production efficiency.
4. Tight seal.
5. Easy to open.
6. Easy to reclose.
7. Dependable supply.

WAXED PAPER INSTITUTE, INC.
38 S. DEARBORN ST., CHICAGO 3, ILL.

...SELL MORE...MORE PROFITABLY...WITH MODERN WAXED PAPER

waxed paper protects freshness

Got Color Matching "Blues"? Check Those Background Hues

Two colors can be identical yet appear to be entirely different. And you're not color-blind; your eyes are just playing tricks. Experts call this phenomenon "simultaneous contrast". The secret lies in backgrounds. Colors that match against the same background appear to jump apart when placed against different backgrounds. So always check your key package colors against all background colors used.

IPI Anilox and Vaposet are trademarks of Interchemical Corporation.

No Need for Crystal Ball, IPI's the One You Call

No matter what your package printing problem may be, IPI can help you solve it. IPI has inks for all hard-to-print stocks—for plastics, foils, glass, cloth, rubber, special papers, boards. And you can get these inks formulated to meet the widest range of package specifications—from rub-resistance to freedom from odor. Call IPI today for inks that speed production of quality packages of every type.

INTERCHEMICAL CORPORATION • PRINTING INK DIVISION • 67 WEST 44th ST., NEW YORK 36 • ADDRESS DEPT. A

ONEIDA PAPER PRODUCTS PICKS IPI ANILOX INKS TO PRINT OUTSTANDING FOOD PACKAGES

Clean, Smart Design, Expert Printing Produce Top-Flight Overwraps

For superb examples of fine aniline printing on MST cellophane, see the new "Lotus" brand frozen food packages. A Packaging Show hit, these sparkling beauties keep their fresh, crisp look in the coldest deep freeze. Oneida Paper Products, Inc. of Clifton, N. J.; Los Angeles, Calif.; Ft. Worth, Texas; and Baltimore, Md.; created the designs and printed them in four colors for Tender Foods, Inc.—picked IPI Anilox inks for the job.

Clean, smart design in brilliant colors makes the "Lotus" packages almost "jump out" of freezer displays—catches eyes and sells the product. The stronger colors and whiter whites of IPI Anilox inks have all the optical punch needed to faithfully reproduce such striking color combinations.

Anilox Inks Print Sharp; Are Brighter, Stronger

IPI Anilox inks are tops for quality work on all stocks—plain and coated paper, board, cellophane, glassine, acetate, foil—even hard-to-print polyethylene. 100% pigmented for full color strength and true opacity, they print clean and sharp on all grades of cellophane.

IPI Anilox inks are made in a full range of colors. And colors are brighter, stronger than ever. Ask your IPI salesman about Anilox inks to solve your package printing problems.

SAVE TIME AND MONEY PROOFING ANILINE INKS WITH NEW HAND PROOFER

The Anilox Hand Proofer is ideal for all Anilox and aniline color proofing, especially on cellophane, glassine, and other non-porous stocks. It is the first hand proofing device for aniline inks and was developed through the cooperation of IPI and Paper Machinery and Research, Inc.

The unit consists of one solid rubber roll and one chrome-plated, engraved, contacting Anilox or Evenflo roll. The Anilox or Evenflo roll is engraved with 165 depressions per inch to measure the proper quantity of ink for average work. It will also serve for users of aniline-type presses lacking engraved rollers. Proofer is $15; extra rolls are $5 each.

Write IPI today for your free copy of Anilox Hand Proofer leaflet and instruction sheet.

ODOR-FREE IPI VAPOSET INKS GIVE BETTER FASTER PRINTING ON WIDE RANGE OF STOCK

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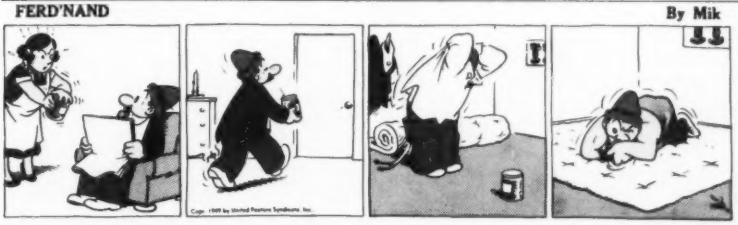

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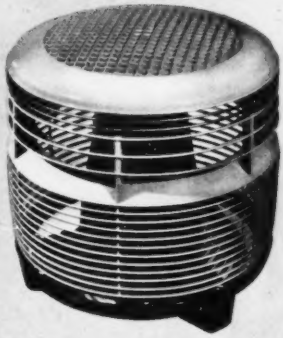

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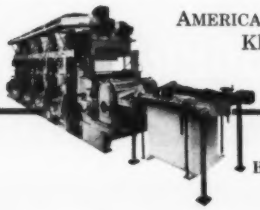

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NASHUA

VOLUME 25
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Modern packaging

GLOW-COLOR PACKAGES

WILL THE NEW DAYLIGHT-FLUORESCENT INKS DO FOR PACKAGING WHAT NEON DID FOR THE SIGN BUSINESS? A TREND IS BEGINNING

Packaging and package display have advanced a significant step forward in the world of color during recent months. The new colors are daylight fluorescent.[1] They glow with a flame-like light and are already well known to the public because of their widespread use, in the last few years, on signs, banners, billboards and posters.

Daylight fluorescent colors are reported by the manufacturer to be up to four times brighter than ordinary non-fluorescing colors, as measured on the spectrophotometer. Because they actually emit light, they appear to be lighted up from within. Packages and labels using these colors enjoy unique display advantages, for in effect they carry their own built-in lighting system, provided by chemical and physical properties in the fluorescent inks.

To the eye, the difference in brightness between fluorescent and ordinary colors is about the same as that between mazda and neon electric signs. It has long appeared to be only a question of time, therefore, before fluorescent pigments would appear in package-printing inks.

There are certain difficulties to overcome. To be effective, fluorescent colors have required a heavy lay of ink. This could be done by silk screening on short-run jobs, but silk screening was impractical for high-speed package production. Packages also required rub resistance, which was not a factor in signs and banners.

As a result of continuous research by those who have pioneered this new field, difficulties have been substantially overcome and the recent advent of daylight-fluorescent gravure inks appears to open the way to true high-speed printing and mass package production at relatively low cost.

Whether widespread adoption of the new glow colors will destroy their distinctiveness—just as a neon sign no longer stands out in a sea of neon—remains to be seen, but within certain remaining limitations of cost and application, daylight fluorescent inks appear to have a future in packaging.

Trail-blazing packagers are now in-

BRILLIANT, EYE-STOPPING, daylight-fluorescent solid-color backgrounds distinguish five different varieties of Kennedy nuts in window cartons—from left: green, magenta, orange, gold and yellow. Copy is black and white, conventionally printed over silk-screened backgrounds.

[1] Daylight fluorescent colors and displays, identified by the registered trade name "Day-Glo" are a development of Switzer Bros., Inc., Cleveland, and many of their products, displays and processes are covered by U.S. and foreign patents.

troducing folding boxes, package sleeves, labels, wrapping papers, display cards and even shipping containers printed with fluorescent colors. Not all of these use gravure printing, by any means; silk screening, aniline and a bronzing method are also employed. Inks and techniques for letterpress and offset application of fluorescent colors remain to be developed—but of course these conventional printing methods can be used to apply ordinary color over stock papers, now readily available, which provide a fluorescent background. For novelty effects, flock and flocked paper are available in a variety of super-bright colors.

The pioneers

One of the pioneer users of daylight fluorescent colors in packaging is Kennedy Salted Nuts, Arlington, Mass. This young company last October introduced color-coded cartons for its line of products, which are vacuum packed in glass jars. The jars are displayed in window-type cartons which are silk screened with daylight fluorescent colors. Brilliant gold-orange, red-orange, green, magenta and yellow colors—running the gamut of the basic fluorescent shades—are used as a solid overlay of background color on tops and sides of the cartons, a separate all-over color being used for each of the five types of nuts packaged.

Kennedy's objective in adopting the brilliantly colored packages was to give the newly introduced products distinctive appeal and enable them to compete with established products. According to the company's president, the new packages have been quite satisfactory. The fact that they command the eye so compellingly has undoubtedly helped stimulate impulse purchases and establish recognition for repeat orders.

The Close Candy Co., Chicago, early this year introduced a folding acetate-window carton printed in stripes of a radiant rose hue blended with a conventional dark blue on ordinary board stock. This container, especially designed for the firm's Royal Mix line of candy, is a real trail-blazing, volume-production example of a package with a new and striking color appeal.

The slanted vertical-stripe design, stressing strong brand identification, is produced by a new process for applying daylight fluorescent colors, using special bronzing equipment. The initial run was 100,000 cartons, which are reverse-tuck style, fabricated from white, patent-coated stock. The carton is patched with a No. 100 clear acetate window and has been printed for five different qualities and flavors, for which copy changes are made on the press accordingly.

Another interesting method of increasing display interest is demonstrated by A & P's use of fluorescent-colored sleeves in promoting sales of packaged teas. The bright sleeves have been used on random packages to pep up mass displays of packages, which over a period of time may become so familiar to shoppers that they lose some of their stopping power. Random use of the sleeves, of course, is as economical as it is effective. Since cost is an important factor in the use of daylight fluorescent colors, ingenuity as well as correct techniques in using them will pay dividends.

The Champion Dry Coaster Co. of Cincinnati silk screens its "Tubs" product name in fiery orange letters against a black background on a paperboard sleeve used in banding the company's eight-unit package of coasters. The luminescent color is especially appropriate for this package, which is small and might easily be overlooked in the jumble of notion items with which the

PIONEER of mass-marketed fluorescent packages is this acetate-window carton for Close's mixed candies. Fiery magenta red, used in name, trademark and diagonal stripes, is printed by a special bronzing process. The second color is conventional dark blue. Background stock is white.

PHOTO COURTESY LIBERAL CARTON & CONTAINER, INC.

EXAMPLE of the brilliance of fluorescent colors may be found in light-green and magenta stripes in this actual sample of a gift-wrap paper, printed by the gravure process. New gravure inks open up mass-production possibilities for packaging. SAMPLE COURTESY DENNISON MFG. CO. and FRED'K H. LEVY CO., INC.

product ordinarily would be displayed.

Another Cincinnati firm, Artisan House, effectively employs a glowing red design on the envelope package for its "Kiddie Glo Pak," a magic drawing set that makes pictures glow in the dark. Daylight fluorescent color is obviously a "natural" for this product's package design, for bright colors producing a gay circus-like effect have long been a proven lure in merchandising products for the juvenile trade.

Kromite Products Co., Bedford, Ohio, uses a spot label, letterpress printed in conventional black on a luminescent orange-colored label stock. Kromite is a white powder chrome cleaner packaged in a 4-oz. glass bottle. The label reportedly has given an otherwise plain-appearing product strong "signal strength" and is credited with helping introduce the product successfully.

Use of daylight fluorescent colors as demonstrated in the examples cited above indicates that the extra brightness can be employed to excellent advantage for new products, small products, or those that by nature lack sales distinctiveness in their packaged form. Discriminate use of the color can, apparently, make the cost practical even for merchandise where the packaging margin is tight.

Thomas Electronics, Inc., Passaic, N. J., has labeled some 25,000 television-tube cartons with a jumbo-sized label lithographed in two colors and imprinted with daylight fluorescent color. The lithographed colors are green and black. The bronzed daylight fluorescent color is a strong red. The super-bright color is used for the trade name and emphasizes the manufacturer's recommendation that replacements should be made with "exact" original equipment. Thus another practical suggestion for the use of fluorescent color is demonstrated—accenting those elements of package label that the manufacturer wishes to be seen first and to receive the most attention.

A solid fibre shipping carton used by the Dayton Brewing Co. for its Kitty Hawk beer is emblazoned with a fiery orange brand name on dark blue panels. The fluorescent color is silk-screen printed to produce heavy ink laydown. The carton should be especially effective in retail store display because of the billboard-like effect achieved with the luminous color.

Numerous other examples of packages using daylight fluorescent colors are now being marketed or will soon appear. Together they indicate that the move to adopt the novel color medium is gathering momentum. Companies large and small are investigating the possibilities. At least two large candy manufacturers merchandising popularly priced candy bars have developed experimental wrappers employing gravure- and aniline-printed daylight fluorescent colors.[2]

Why the colors glow

These luminous colors are produced by adding daylight fluorescent pigments to printing or coating inks. Such pigments have the unique property of converting radiant energy of short wave lengths, such as ultraviolet, violet and blue into visible light of longer wave lengths—as green, yellow and red.

All color and all vision depend on the reflection of light. Daylight fluorescent colors, however, change both visible and invisible rays into extra light output. This increased light output reaches the eye as a super-brilliant color.

There are two general types of luminescent pigments—phosphorescent and fluorescent. The former soaks up light and glows in the dark after the external light source is removed. This type of pigment is not involved in any of the applications which are described in this article.

Fluorescent pigments glow while exposed to ultraviolet or short-wave visible rays—which of course are present in ordinary daylight—but have very little after-glow when the light source is removed.

In recent years, special "black light" lamps have been developed for use with fluorescent colors and are now beginning to be used for special displays in stores and windows. At night or in darkened areas, fluorescent colors activated by rays from ultraviolet lamps glow like stained glass subjected to brilliant back lighting. The possibilities of this phenomenon in package display are largely unexplored, but potentially striking effects are possible.

Packaging factors

One of the important questions packers will ask concerns the matter of toxicity.

Although the Federal Government has as yet neither approved nor disapproved the use of daylight fluorescent pigments on food packages, the developer of the new colors is confident that toxicity of the pigments is no problem.

From laboratory analysis of these pigments, he says, it is apparent that they contain less toxic material than many of the coatings currently accepted for linings of food containers, whereas daylight fluorescent pigments would be used only on the exteriors of packages. The manufacturer adds that his production workers have been handling the basic materials for many years and not one case of disability has been reported as the result of physical contact.

Other questions to be faced by the prospective user of fluorescent colors are: Where do they function best? How long will they retain their brilliance? What printing methods are best?

Daylight fluorescent colors are relatively more effective under fluorescent lighting than they are where mazda bulbs are used. Also, they appear brightest on cloudy days and they do much better at low levels of lighting than ordinary colors. These new colors may lose their intensity in time and this loss may be fast or slow, depending on the thickness of pigment applied and the length of exposure to sunlight.

Many types of packages, because of the light laydown of ink effected by some printing methods, will not be

SIGNAL STRENGTH for small articles and labels may be achieved with fluorescent printing. Kromite label is letterpress overprinted in conventional black on a fiery orange-coated fluorescent stock. "Tubs" name is silk screened in orange on black.

[2] These wrappers are being produced by Milprint, Inc., Milwaukee, Wis., which reports that it has developed methods and facilities for both gravure and aniline printing of fluorescent colors.

LIGHTED BILLBOARD effect is provided by the bold name "Kitty Hawk" silk screened in fluorescent orange-red against conventional dark blue panels of this solid-fibre shipping case used by Dayton Brewing Corp.

suitable for window display where they would be exposed to direct sunlight. In some instances shelf-displayed packages printed with daylight-fluorescent gravure inks, reportedly, may lose 15% of their brilliance in six months. The residual brightness at this rate of loss, of course, would still be highly favorable when compared with ordinary colors. Some fluorescent shades maintain brightness for longer periods than others.

These and similar problems, however, are matters to be carefully investigated in cooperation with designers and daylight fluorescent specialists, including the printers and paper manufacturers licensed to use the superbright fluorescent colors.

In general, large-area applications of silk-screened, bronzed or gravure-printed fluorescent colors are indicated for best display effects. Dark backgrounds provide exciting contrasts and accentuate the brilliance of the fluorescent colors. Simple layouts and adequate spacing of design elements and lettering are advisable to provide maximum impact with the color signal or message. Where exceptionally strong attention-getting packages are desired, two or more fluorescent colors can be used in combination, thus increasing both the luminosity and the contrast values.

Choosing the color medium

The package manufacturer may choose from a number of different fluorescent-color media. An unusually heavy application of the colors is essential to assure a practical degree of sunfastness and full color brightness.

For this reason, the most popular means of applying the new colors, up to this time, has been by silk screen. The wide acceptance of colors has hastened the mechanization of the silk-screen industry. The newer types of silk-screen presses are said to deliver uniformly good impressions at production rates approximating 1,000 an hour.

A striking color contrast is obtained by silk screening fluorescent color on a display piece on which the rest of the copy has been printed by letterpress or lithographed. Daylight fluorescent flock (imitation suede) and fabrics may be used for special types of display and packaging jobs in which brilliant color and luxurious texture or finish are required.[3] Striking visual effects for decorative packaging or novel display can be achieved with the new combination of daylight fluorescent color silk screened on metallic acetate.[4] The combination of gleaming metal finish with glowing color makes for unusual contrast and attention value.

The limitation in regard to standard-type printing with letterpress and offset imposes obvious restrictions for labeling and similar packaging applications. However, as in the case of the Kromite label previously discussed, the limitation can be overcome by letterpress printing conventional color over daylight-fluorescent coated stock.

For a number of years such coated stock was available only in limited supply, but it is now being produced by a large Eastern paper manufacturer,[5] whose mills and extensive distribution facilities should assure adequate supply and convenient deliveries from leading paper merchants in all parts of the country. The new-type stock is said to have exceptional printing qualities on any type of letterpress or offset job and is highly resistant to cracking and mark-off.

Brilliant daylight-fluorescent coated paper stock, backed with a special gumming, is supplied at present by an Eastern manufacturer[6] in stock sheets, 20 by 25 in., cut from 50-in.-width master rolls. The same company is manufacturing a line of gift-wrapping papers and a wide variety of gummed labels and stickers in a choice of several brilliant fluorescent colors.[7]

Gravure inks

Daylight fluorescent gravure inks are now available in red, green, orange and yellow.[8] They are designed for certain types of labels and packages. Because fluorescent gravure inks are applied with high-speed presses, a thinner film is obtained. Up to this time it has generally been necessary to use double impressions. Jobs printed with these inks have not been suited to outdoor display. The gravure inks sold to date have not been recommended for any packaging job that would be displayed in sunlight, either direct or through window glass.

[3] "Day-Glo" fluorescent flock is manufactured by The Rayon Processing Co. of R. I., Pawtucket, R. I.

[4] "Mirro-Brite Acetate" is produced by Coating Products, 136 W. 21st St., New York.

[5] Crocker, Burbank Papers, Inc., Fitchburg, Mass.

[6] Dennison Mfg. Co., Framingham, Mass.

[7] Gummed fluorescent stock is also being made by the Mid-States Gummed Paper Co., Chicago. Kleen-Stik Products, Inc., Chicago, is making fluorescent pressure-sensitive adhesive stock.

[8] "Fluoress" Day-Glo gravure inks, manufactured by Fred'k H. Levey Co., Inc., New York.

Because of the fading factor, fluorescent gravure inks available to date have been used in the packaging of merchandise that would not be used in lengthy window displays. For instance, these inks are said to have been well-suited to the packaging of frozen foods and many kinds of fresh meats and vegetables, ice cream, candy, chewing gum, tobacco, cleaning fluids or the types of toiletries subject to deterioration in sunlight.

These restrictions do not generally apply to any packaging application that makes use of fluorescent-coated papers or silk-screen process inks. Both of these provide colors that are lightfast for a full 30 days of continuous exposure to summer sunshine; they will last indefinitely in storage or on retail shelves.

Gravure inks, on the other hand, have shown a noticeable loss in intensity if exposed to direct sunlight for extended periods. When exposed only to reflected sunlight, brightness will be maintained for periods of six to 12 months. No deterioration in brightness occurs under artificial light or during dark storage, it is claimed.

Fluorescent gravure inks are said to bond well on most papers, glassines, cellophanes and carton boards. Flint-glazed papers or clay-coated boards, however, may require sizing with opaque white or other suitable material to prevent pigments from powdering when the ink carrier filters into the surface of these two stocks.

Bronzing

Another method of applying daylight fluorescent colors has already found use in packaging. Daylight fluorescent bronzing powders, specially formulated from fluorescent pigments, provide a high-brightness color medium. The sizing is put on by a high-speed press connected with a bronzing machine which applies the powders and completes the job with a single press run.

One firm that has pioneered in development of this method[9] has equipment handling sheet sizes up to 22 by 34 in.—printing any material that can be fed through an ordinary press. Halftones cannot be used, although hairline register can be achieved with line cuts and type.

Origin and licensing

Some 20 years ago, when most luminous materials were little more than laboratory curiosities, Robert and Joseph Switzer developed practical applications of "black light" fluorescent materials for use in magic shows. In the intervening years, many commercial applications have stemmed from their work, including invisible laundry marking inks, lithographing inks, theatrical fabrics and use of fluorescent materials in locating defects in fabricated metal parts of motors and similar machinery. Considerable use of fluorescent materials was made by the armed forces during World War II.

The Switzers license all users of their daylight fluorescent products. The licenses are non-exclusive and entirely voluntary. Such a program—aside from the legal protection afforded—is designed to prevent misuse of daylight fluorescent materials by providing real and effective quality control, it is said.

A new design tool

Daylight fluorescent colors open up to imaginative designers challenging horizons where extra brightness may create new beauty, attention and accent. Interest in the new colors will certainly be given strong impetus by the currently increasing emphasis on eye-appeal and self-selling packages.

Today's package design is dependent on a number of elements, of which color is only one. But artists will agree that color is one of the most essential single factors in any packaging job. Omit color entirely and a large percentage of the most expertly designed packages would fail to do the job expected of them. Certainly without color a package in a food or drug store would be hopelessly outdistanced in today's highly competitive race for impulse sales. Colors up to four times as bright as the brightest of ordinary hues offer, therefore, new and stimulating opportunities in packaging.

CREDITS: **Kennedy Nuts**—Cartons, Paper Goods Co., Inc., 270 Albany St., Cambridge, Mass.; design and silk-screen printing, Eunice H. Pelley Studios, 10 Marshall St., Boston, Mass. **Close Candy Co.**—Cartons, Liberal Carton & Container, Inc., 3611 Normal Ave., Chicago 9; bronzing, W. H. Wilton, Inc., 25 S. Seeley Ave., Chicago 12. **Thomas Electronics, Inc.**—Labels bronzed by W. H. Wilton, Inc. **Kromite Cleanser**—Labels, Oak Printing Co., 2570 Superior St., Cleveland, Ohio. **Champion Dry Coasters**—Sleeve bands, Ed. N. Schoenberger Silk Screen Printing, 138 E. Second St., Dayton 2, Ohio. **Kitty Hawk Beer**—Shipping container, The Eddy Paper Corp., Three Rivers, Mich.; silk screening, Ed. N. Schoenberger. **"Kiddie Glo-Pak"**—Envelopes silk screened by Artisan House, 230 W. 4th St., Cincinnati 2, Ohio. **Dennison "Firetone" gift wrapping paper**—"FHLORESS" Day-Glo gravure inks, Fred'k H. Levey Co., Inc., 41 E. 42nd St., New York 17. **Day-Glo daylight fluorescent color materials** used in all of the above applications, Switzer Bros., Inc., 4732 St. Clair Ave., Cleveland 3, Ohio.

GIFT WRAPPINGS gravure printed in fluorescent reds and greens will put a new color note in Christmas packaging this year. Similar fluorescent-printed papers will make striking decorative covers for set-up boxes.

PHOTO COURTESY DENNISON MFG. CO.

[9] W. H. Wilton, Inc., Chicago.

SETTING UP carton, right hand presses handle and center down and forward; left hand simultaneously presses bottom up.

GATE LOCK is pressed in place by spread fingers of left hand. Carrier is now rigid, ready for filling.

Tonic for sales

CANADA DRY PUSHES THE TREND TO GIN AND TONIC

WITH A NEW FIVE-COLOR, FOUR-BOTTLE CARRY CARTON FOR QUINAC

Canada Dry is staking a considerable portion of its summertime mixer promotion on a continued rise in popularity of "gin and tonic" and is backing this up with a new four-bottle carry-home carton for the company's "Quinac" brand of quinine water which Vice President W. S. Brown calls "unquestionably the most de luxe beverage carton ever introduced in the U.S. market."

The paperboard carton, of unusual self-handle construction, is believed to be the first printed in five-color process and has many advantages over the closed carton previously used for Quinac, according to Mr. Brown. Among the advantages, he cites "visibility of the bottles, much greater appetite appeal, ease of carrying and the fact that this carton lends itself well to stacking in merchandise displays."

Because of the complexity of the design and the necessity of extremely rigid color control, company and agency designers worked very closely with the carton manufacturer in determining the style and construction of the carton for a semi-automatic machine-filling operation, securing original process engravings and establishing color standards.

The carton was considered not only from the standpoint of its carry-home function, but as an important element in store display, which, to be a successful merchandising aid, must in this case stimulate thirst and suggest cool, refreshing relief from the heat. For this purpose, the frosty glass of gin and tonic was introduced against a tropical setting of palm trees waving in an azure blue sky. The basket-weave background—symbolic of the tropics and also suggesting carrying strength in the carton—and the identifying Canada Dry shield were considered equally important elements.

The letterpress job is run on five-color equipment which assures accurate register and excellent screen reproduction. The carton is varnished and die cut to conform with the upper contours of the palm trees.

This year, for the first time, a merchandising display unit is being introduced to stimulate sales of Quinac cartons at retail outlets. Extremely simple to erect, this unit is made by upending two wooden beverage cases and covering them with a wrapper skirt. This will hold 12 of the four-bottle cartons, placing them within easy reach. The unit may be used in multiples in the larger stores, but was purposely made small to permit its use in delicatessens, which, among the best outlets for Quinac, are usually quite cramped for space.

Gin and tonic as a summer drink favorite in this country is a comparatively recent phenomenon, but its rise in the past four years has been a sensation of the beverage field. It was born years ago in the tropics, where daily rations of quinine were necessary as a malaria preventive. British ingenuity discovered that the bitter dose could become a thing of pleasure if the quinine were mixed with soda and gin. The Colonial administrators took the drink back to England.

The next step was to devise a quinine tonic for purely beverage purposes, taking it out of the medicinal class but still retaining enough quinine to keep the slightly bitter tang and infinitely cooling effect. This was done first in Europe and later in this

FILLED CARRIER offers safe, easy grip, with cut and scored finger opening.

country. Canada Dry introduced its Quinine Water in 1938.

Scarcely had Canada Dry's product gotten its feet on the ground when the war came and the Army requisitioned all supplies of quinine. Canada Dry re-introduced its Quinine Water after a seven-year absence, in 1948, with adequate promotion and distribution to bring about a volume of sales higher than prewar. Regarding 1948 as the base year with sales of 100%, in 1949 the sales rose to 205%, in 1950 they were 385% and last year they reached 495% of the 1948 figure. Canada Dry's Quinac is now considered by far the largest-selling brand of quinine water on the U.S. market.

Gin and tonic has a way of inspiring an almost fanatical devotion among its converts, the company has found, and word-of-mouth promotion has been a very important factor in the sharp rise in sales of quinine water, though Canada Dry has advertised it fairly extensively for the past two or three years. Consumption has zoomed from about 3½ million drinks in 1948 to over 16 last year and is expected to top 30 million this year.

Canada Dry's promotion of gin and tonic this summer will feature the new slogan, "Take it cool—make it easy," highlighting the drink's two main points of attraction: no other drink, the company claims, has such a cool, refreshing taste and where most other summer drinks are difficult or messy to prepare, gin and tonic is easy to make, requiring only gin, Quinac, a slice of lime and ice.

While the season is not yet far enough advanced to determine the exact effect of the new five-color carrier, Canada Dry expects it to be instrumental in pushing even further the gin-and-tonic evangelism. The four-bottle size was deliberately picked, in preference to the conventional six, in the belief that it would be more apt to tempt trial purchases, knowing that converts would pick up two and three cartons at a time.

COLOR PLATE COURTESY NEW HAVEN PULP & BOARD CO

STRIKINGLY COLORFUL and thirst-inspiring is the new five-color, letterpress-printed folding carton which suggests the cooling properties and the ease of preparation of gin and tonic.

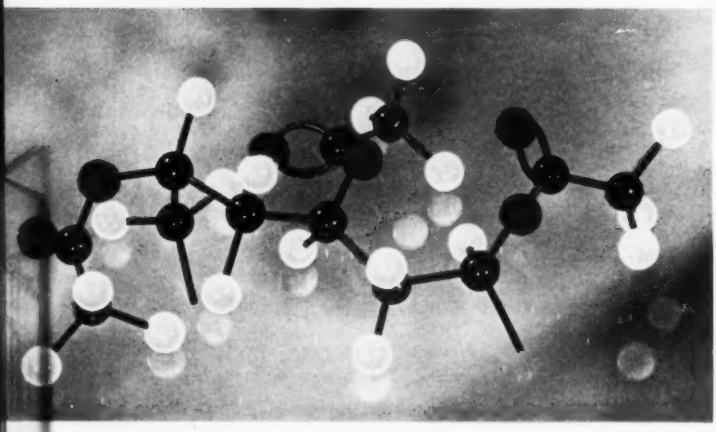
CREDIT: *Carry-home carton, New Haven Pulp & Board Co., 259 East St., New Haven 8, Conn.*

FLOOR MERCHANDISER is formed by up-ending two wooden beverage cases and wrapping them with a printed skirt provided by Canada Dry, carrying out the tropical theme. Good stacking is one advantage of new carrier.

Resin adhesives

A LAYMAN'S REVIEW OF THE SPECIAL PROPERTIES OF THIS IMPORTANT NEW CATEGORY OF PACKAGING ADHESIVES.

By Earl C. Lenz* and Raymond Stone†



MOLECULAR MODEL of polyvinyl acetate, formed by uniting single molecules of vinyl acetate to give the long-chain polymer which makes resin adhesives so effective and of growing significance to the packaging field.

Although resin-base adhesives have been used by certain divisions of the packaging field for many years, there are numerous instances currently where production men in other sections of this field are making experiments and adaptations of these versatile production tools for the first time.

Ten to 15 years ago, pioneer packages that were formed or sealed with resins were displayed, described and examined with great interest. Today the use of resin adhesives has become commonplace. They can be found in practically every phase of packaging in one use or another.

Despite the growth in the development and use of resin adhesives, there are many packaging engineers, production superintendents and workers who are not fully acquainted with the principles and theories concerning the manufacture and correct application of these useful products. The authors feel that this review of the subject—explaining the principles involved in the formulation of these adhesives and giving the advantages and limitations of the various types, with suggested application methods and handling procedures—may further the efficient utilization and expansion of these adhesives in more divisions of the packaging field. Further, it may assist in solving new gluing problems in plants that already may have a partial knowledge of these products.

When we look over the amazing array of synthetic resin adhesives made available during the past 15 years, we must direct our thanks to workers in several fields of research. Adhesive research aims at applying to industry's adhesive problems the truths gained by workers in all fields of science who have examined the materials of nature. We were helped first by the pure scientist who established the molecular structure of the natural adhesive materials, such as starch, animal glue and casein. Then followed the discovery in chemical research laboratories of the types of chemicals and methods for processing them to produce similar structures for synthetic adhesives having new and better properties.

Research on the structure of natural adhesives, such as starch, dextrine and animal glues, showed that they are composed of bundles of large molecules. These molecules have shapes similar to fibres of cellulose and wool—very long and very narrow. This important fact stimulated research to find chemicals, the molecules of which could be joined together to form long super-molecules known as high polymers. Vast differences in products may be obtained by changing the chemical composition or by changing the sizes and shapes of the molecules.

Polymerization is the process whereby two or more molecules of the same substance, or of different substances, unite to give a more complex, long-chain molecule. The resulting polymeride has the same percentage composition as the original substance, but a molecular weight which is often many thousands of times as great.

By such methods, then, the adhesive chemist takes a monomer, such as vinyl acetate, which has no adhesive value in itself and polymerizes the compound to polyvinyl acetate, a long-chain molecule which has very definite adhesive value. A copolymer is produced by polymerization of two entirely different monomers, such as butadiene and styrene, which produce the very useful adhesive base, synthetic GRS latex, a man-made rubber which in many respects is superior to natural tree-obtained rubber latex.

The majority of resin adhesives in use today employ as basic raw materials the same high-polymer synthetic plastic compounds which are responsible for the development of many useful products for the home and industry. These plastics include urea-formaldehyde resins, vinyl resins,

* Vice president and general sales manager and † chief resin chemist, Paisley Products, Inc., Division of Morningstar, Nicol, Inc., Chicago.

polystyrene, acrylic, ethyl cellulose resins and others. Not to be ignored are the synthetic rubber "plastic" materials such as Neoprene, GRS, butyl rubber, Hycar and other derivatives of copolymer origin. Natural latex, nature's most important "plastic," is also extremely useful in producing adhesives which are classed in the "resin" category for purposes of this discussion.

Almost everyone is familiar with the so-called water-soluble adhesives:

Starch pastes—exemplified by library paste.

Dextrine glues—such as case-sealing, carton-sealing and bottle-label glues.

Animal glues—used by bookbinders, luggage manufacturers, paper-box plants.

Casein glues—used in woodworking, tube winding, glassine lamination, etc.

Water-soluble adhesives play an important part in a wide variety of packaging-adhesive operations. However, because of their lack of water resistance and their inability to adhere to non-porous surfaces, there are many packaging operations in which they cannot be used.

Resins, on the other hand, are extremely water resistant and can be made to adhere to a wide variety of non-porous surfaces, such as metal, foil, saran, cellophane, cellulose acetate, vinyl films, etc. However, in order to use these water-soluble resins in adhesives, it was necessary, until recent years, to dissolve them in organic solvents. These solvent-type adhesives were flammable, often toxic and odorous, and had many other disadvantages such as poor machining qualities, slow setting speeds and high cost.

"If only it were possible," thought the adhesive chemists, "to combine the low cost, ease of dilution and clean-up, the non-flammability, the excellent machining properties and the rapid set of the water-soluble adhesives, and the water-resistance and superior adhesive properties of the resin adhesives in a single-type product."

After many years of extensive research the answer was found in the development of the emulsion-type adhesive. Taking his clue from natural emulsions occurring as secretions in various plants, the adhesive chemist found ways of subdividing these water-insoluble adhesive materials into particles of minute size and of keeping them permanently suspended in water.

What are resin emulsions?

An emulsion is a stable dispersion of a water-insoluble liquid or solid in water. If oil and water are shaken together, they become mutually dispersed in the form of tiny globules, but after a few minutes, the globules of oil will begin to fuse together until the oil and water again separate completely into two layers. However, by use of an emulsifying agent it is possible to keep the particles of oil permanently in the water. The emulsifying agent acts (1) by decreasing the surface tension of the liquid, thereby lessening the tendency of the small drops to coalesce into larger ones and

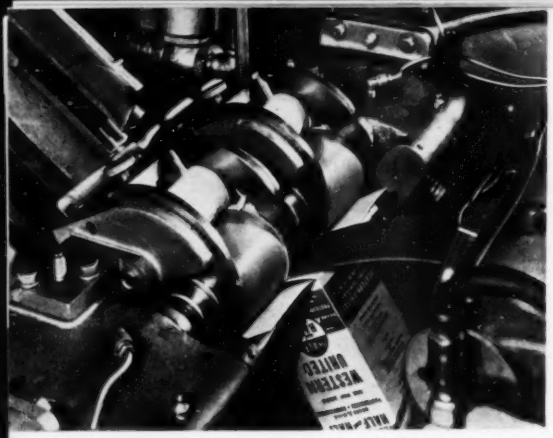
Typical applications of resin adhesives

STRONG BOND on automatically cartoned beer six-pack flaps is indicated by the tearing of the fibres on opening carton.

CARTON FORMER uses fast-setting resin adhesive to set up these gaily printed boxes for candy bars.

MILK CONTAINERS use resin adhesives which are odorless, non-toxic, non-staining and are resistant to lactic acid and water.

SPIRAL-WOUND all-fibre containers for frozen or refrigerated foods are bonded with resin adhesives.



APPLICATION of strong, deep bonds of resin adhesive in formation of paper milk containers gives dairies the continuous, trouble-free operations that speed production and profits.

BEVERAGE CARRIERS are manufactured at high speed with resin adhesives and are resistant to dampness and rain, as well as to extremes of temperature.

(2) by forming a protective layer or sheath around the drops of oil. In addition, it is often possible to stabilize the emulsion further by imparting a positive or negative electrical charge to the dispersed particles; as a result, the particles repel one another instead of coalescing.

There are several methods of forming resin dispersions or emulsions, but by far the most satisfactory method is one known as "emulsion polymerization." In this process a liquid, called a monomer, is first emulsified in water. Then by the use of heat and the proper catalysts the monomer molecules are linked together in the form of long chains to form a resin polymer in emulsified form. The nature of the resin is determined primarily by the monomer used. A most useful and versatile adhesive resin emulsion is made, for example, by the emulsion polymerization of vinyl acetate to form polyvinyl acetate. Polystyrene, polybutadiene, polymethacrylates, polychloroprene and many other resin emulsions can be made the same way.

It is also possible to copolymerize two or more different monomers. Many synthetic rubbers are made by emulsion copolymerization. GRS latex is a copolymer of butadiene and styrene. Hycar or Buna-N latex is a copolymer of butadiene and acrylonitrile. The nature of the copolymers can be varied by changing the ratio of the two monomers.

Of course, there are many other factors involved in making these emulsions and in modifying them for specific adhesive applications. The type and amount of emulsifying agent, the type and amount of catalyst, modifying agents such as thickeners, plasticizers, solvents and non-film-forming resins, the temperature, the order in which the ingredients are added, the type and speed of mixing, the nature of the electrical charge—all these play a most important part in compounding a suitable resin-emulsion adhesive. Leading adhesives firms have spent many years of extensive research in the investigation of the most suitable raw materials for resin adhesives and the best ways of making them into adhesive emulsions. As a result, they have reduced this highly technical branch of the chemical industry to a veritable science.

Advantages

The adhesive industry's success in making resin emulsions has resulted in a great advancement in the field of adhesive technology. Adhesive chemists are now able to make water-base adhesives that have all the inherently advantageous properties of synthetic resins. The following is a list of some of these properties that can be obtained in resin-emulsion adhesives:

1. *Strong adhesive bonds* to a wide variety of difficult surfaces. Resin-emulsion adhesives can be made to adhere almost any two similar or dissimilar porous or non-porous surfaces.
2. *Water resistance.* They can be made to meet any immersion-test specification.
3. *Chemical resistance.* Resin adhesives are resistant to acid, alkali, fats, oils and to a wide variety of solvents.
4. *Fast setting.* Resin-emulsion adhesives can be made that are faster setting than water or solvent-base types because, due to their water insolubility, they do not retard evaporation.
5. *Higher solids* than with solvent solutions of the same resin base.
6. *Obtainable in any desired viscosity* from thin liquids to heavy pastes.
7. *Good machining.* Resin-emulsion adhesives run clean and dependably in a wide variety of glue-applying equipment.
8. *Non-flammable, colorless and odorless.*
9. *Permanently flexible.* Resins can be plasticized chemically; consequently, they retain the same degree of flexibility regardless of humidity.
10. *Moldproof.* They are unaffected by insect infestations or rodents. Because they are synthetic chemical compounds they are not food for animal life.
11. *Humidity resistance.* Completely resistant to 100% humidity.
12. *High wet tack.* Resin-emulsion adhesives can be made that have a high degree of wet tack even at relatively low viscosities, an important property in high-speed packaging.
13. *Economical* due to good mileage and high setting speeds.
14. *Greater margin of safety.* Many carton manufacturers use resin emulsions exclusively because they give strong, dependable bonds regardless of variations in board stock.

Thus it is possible to obtain resin-emulsion adhesives to meet the most exacting requirements of almost any adhesive operation.

Methods of applying

There are many methods of applying adhesives and most of them can be used with resin emulsions. The

EXPORT CASE LINERS and bags are formed, and final closures made, with resin adhesives meeting the requirements of JAN and MIL specifications. Special grades of resin adhesives are designed for application by hand brush, flow gun or automatic machine.

ALL PHOTOS COURTESY PAISLEY PRODUCTS, INC.

following is a brief summary of the application methods found suitable for resin adhesives.

1. *Brush application.* Resin adhesives can be applied by hand brushing, but care should be taken to clean brushes frequently before the adhesive film dries, as most resins are water resistant when dry. During waiting periods the brush should be kept immersed in the adhesive up to the handle to avoid formation of dried films in the "heel."

2. *Direct roller.* By this method the roller revolves in the glue reservoir and a scraper blade or roller regulates the thickness of film to be applied to the materials contacting the direct roll. The majority of packaging-industry equipment utilizes the direct-roller method of application.

3. *Transfer roller.* This arrangement consists of two rollers, one being submerged in the glue reservoir, which transfers the adhesive to the second roller, which may be either fixed or movable, as in the case of plunger envelope machines or bottle-labeling equipment. This method requires tricky adjustment of resin-adhesive drying cycles and is not the most desirable method for emulsion adhesives.

4. *Stencil application.* Here the adhesive is applied by transfer method to a segment roller, shaped to the area that requires adhesive application. This method is occasionally used for resin adhesives.

5. *Rubber-stamp method.* This is a hand-operation method whereby the adhesive is picked up from a shallow pan or glass plate by a sponge-rubber pad shaped to the gluing area desired. The adhesive thus picked up is "printed" by hand onto the surface desired.

6. *Silk-screen method.* A masked area is placed on a silk screen stretched on a wood or metal frame. The adhesive is squeegeed back and forth, being forced through the screen mesh openings onto the surface to be coated. This is an excellent method for applying resin adhesives to selected areas.

7. *Flow gun.* The adhesive is forced by air pressure through a thin, flat, orifice onto the work. Typical use is in seaming case liners and closing bags.

8. *Spray gun.* A coarse, spatter-type spray gun is used to coat large areas with resin adhesives. Masking can also be done to confine application to selected areas.

9. *Belt-transfer method.* The adhesive is applied to a moving belt which comes in contact with the label lap or wrapper.

10. *Dip-transfer method.* A frame dips under the surface of the adhesive reservoir and, upon rising, the points in contact with the work deposit a series of dots on the materials to be bonded. Another dip method, employed in the shoe industry, has a grid which carries a whole object under the adhesive for full coating of the item with adhesive.

Suggestions for handling

The following directions should be followed to obtain the most satisfactory results with resin-emulsion adhesives:

1. Use oldest stocks first, since the shelf life of some resin emulsions is limited.

2. Resin adhesives should be stirred thoroughly before using.

3. Keep adhesives covered when not in use.

4. Put covers on machine glue pots to avoid skinning.

5. Use resin adhesives at room temperature.

6. Avoid freezing, since most resin

(This article continued on page 180)

LABORATORY METHODS determine which of the countless formulations of resin adhesives is best for any particular packaging application.

Packaging's Hall of Fame®

FORTY-FIRST OF A SERIES

EASTMAN Kodak FILM

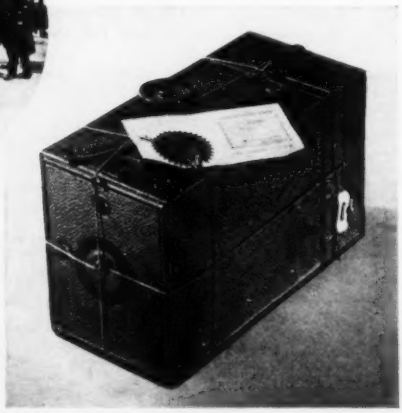
When George Eastman began popularizing amateur snapshooting in 1888, you couldn't buy packaged roll film at the corner drug store.

For $25 you bought one of the first Kodak cameras – a black box 6 in. by 3¼ in. by 3¾ in., weighing 24 oz., loaded with roll film containing a hundred exposures. This was the first light-weight film camera that could be held in the hand during exposure. Many old timers still remember the slogan: "You press the button; we do the rest."

As there was no way to protect film in a package, these early cameras had a serious drawback. After you took the pictures, the camera had to be sent back to Rochester, where the exposed film was removed, developed and printed. For $10 the negatives, prints and the camera, reloaded with a hundred new exposures, were returned to you.

The Eastman Kodak Co.'s development of methods for the individual packaging of sensitive, roll-type photographic film provided one of the most important links in the chain of research accomplishments that has made photography such a generally accepted part of modern civilization. More important, from a packaging standpoint, it constituted one of the earliest and most extraordinary examples of highly specialized mass-production techniques in protective packaging – paving the way for today's widespread use of aluminum foil combinations as efficient barriers against water-vapor and light.

This achievement alone would amply qualify Kodak Film packages for nomination to *Packaging's Hall of Fame*. Beyond that – and in no small measure because of that – Kodak film, in the famous yellow packages, continues after nearly three-quarters of a century, amid dozens of competitors, to be the undisputed world sales leader in its field, recognized wherever the provocative trademark, "Kodak," is seen.



BEFORE PACKAGING methods for film were devised in 1890, early Kodak cameras, like the late George Eastman is holding, had to be sent to Rochester for loading and unloading. Method of sealing loaded camera at factory before returning to customer is shown by photo of earliest Kodak camera.

Package development

Mr. Eastman recognized that his dream of a "complete system" of photography for the millions could become a reality only if his customers could get away from the nuisance and expense of shipping the camera back to the factory for loading and reloading.

That meant (1) a method of protecting the film on the roll so that it could be loaded by the user safely and easily in daylight, (2) an inexpensive lightproof, moisture-resistant package for the roll that would provide long shelf life and (3) a method of merchandising the packaged films that would make them readily available to snapshot-shooters everywhere.

The physical requirements of the package were extraordinary for that cracker-barrel era. Late in 1890, two years after the first camera appeared, George Eastman was ready with a film package that met some of the requirements. Several samples of these first history-making packages are still intact in the company's files. One of them was ceremoniously opened to provide the illustration which appears with this article on page 100.

Carefully, with a knife, the now-brittle, hand-pasted paper end labels and outer kraft paper were removed from a carton similar in shape to today's film carton. Inside, the roll of film was found covered with a hand-twisted piece of black paper. The strip of film, itself, was wound naked around a solid wood core equipped with slotted axles to engage with the turning key in the camera. No backing paper was wrapped with the film;

NOMINATED FOR PACKAGING'S HALL OF FAME BECAUSE:

- **It pioneered in lightproof, moistureproof packaging—on which the life of thousands of Eastman products depends.**
- **Its success with metal foil early pointed the way to widespread use of aluminum foil as a protective packaging material.**
- **Strong merchandising behind a strong brand name made its yellow package one of the world's most familiar symbols of dependable packaged goods.**
- **It was a leader in establishment of a company-wide packaging control system—a model for many others.**

the package had to be opened and the camera loaded in darkness.

This package, inconvenient as it was, gave a considerable degree of protection. The film it held still showed sensitivity after some 60 years—changing from an almost ivory color to coffee brown within a few hours after exposure in daylight.

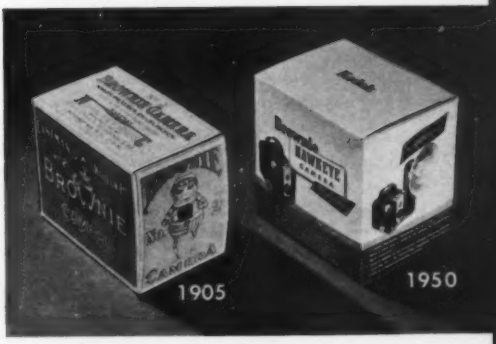
With Mr. Eastman's strong desire for improvement, it did not take long for a better method of packaging to be developed. The company's records show that the Eastman company marketed its first packages of daylight-loading roll films in 1891, permitting the amateur to load and unload his camera without taking it into the dark room.

An existing 1891 package shows the same kind of wooden spool for the film, but with a black cloth leader attached to both ends of the film. The film and cloth leader were then placed in a paperboard carton, slit lengthwise along one edge and provided with strips of black velvet glued along both sides of the slit to form a "light lock." This carton was overwrapped with paper. When the paper wrap was removed the carton served as a film magazine which could be loaded into the camera. The cloth leader, threaded through the light-locked slot, could be pulled to guide the film, without exposure, to an opposing container on the other side of the camera. Holes in the ends of the carton permitted the wood cores to engage with the winding mechanism.

It is interesting to note that, in principle, this package was quite similar to the metal cartridge from which 35-mm. film is now wound through cameras.

Actually, the first metal-flanged film cartridge was introduced in 1895. The flange, plus backing paper for the

TODAY the famous yellow carton of Kodak Verichrome Safety Film is a recognized symbol of amateur photography around the entire world.



MODERN Brownie carton in comparison with one of early Brownie packages in 1905—the low-priced camera that made photography a universal and widespread hobby.

First steps in packaging development

ORIGINAL PACKAGE consisted of strip of film wound naked around solid wood core, taped and hand wrapped in black paper, placed in carton, overwrapped with brown paper, sealed with labels. Film had to be put in camera in dark room.

FIRST CARTRIDGE film made use of metal-flanged spool, giving light protection to ends. This added safety feature, plus use of lightproof backing paper wound with the film, eliminated need for carton as magazine. Overwrap was eliminated and first printed cartons used. Photo shows William Connors, first person to spool film, now retired, operating the original machine on which he wound Kodak film in 1895.

FIRST DAYLIGHT-LOADING package made use of the carton as a film magazine which was inserted in camera. Velvet edging along side slit in carton provided a "light lock." A black cloth leader permitted guiding film to a similar opposing carton without danger of exposure.

complete length of the film, permitted completely satisfactory daylight loading without the use of the carton as a film magazine. The need for an outer wrap was also eliminated and a printed carton was first used.

Space-number indications were printed on the backing paper so that the user might keep track of exposures through the safety window on the back of the camera – a convenience feature which the earlier Kodak cameras did not have.

The deleterious effect of moisture on film emulsions was quickly recognized. It was obvious that if packaged film was to be distributed widely with long shelf life it would require protection to keep atmospheric moisture out of the package. The use of metal outer containers, such as are used today for color film and for some tropical packs, was considered, but may have been unacceptable for economy reasons. Yet there was no substitute–and still is no completely adequate substitute – for metal as a moisture barrier. Flexible metal foil that could be easily wrapped around the film to conform to the shape of the film cartridge offered an effective, light-weight and comparatively inexpensive solution to the problem. The opaqueness of foil also had the advantage of giving added lightproofness to the package, although its primary function is moisture protection.

Eastman began wrapping roll film in lead foil in 1912. Later lead foil was used in combination with waxed paper, which gave greater protection in case of pinholes in the foil.

Such materials were used until the introduction of aluminum foil during the early '20s. Since that time Kodak film has been protected by laminated aluminum foil wrappings incorporating waxed paper. Constant research has been conducted to improve the moisture protection of these wraps, resulting in the most advanced laboratory techniques for testing water-vapor transmission through package barriers and in the development of the efficient automatically heat-sealed, foil-paper wraps now provided for special tropical packs and others which must withstand more than average conditions of distribution.

The first decade of Kodak film packaging was concerned almost entirely with protective aspects. During the second, emphasis was directed to appearance factors. The first printed carton was followed in 1903 by a red-and-gray carton for the first Kodak NC (non-curling) film. A designation based on product improvement inaugurated a procedure used for years on Kodak film packages.

The yellow packages

The first of the now-famous yellow packages appeared about 1905. This color, in varying hues – one of which

has now been established spectrophotometrically as a standard Kodak yellow – has become almost as inseparably associated with Kodak as the trademark itself.

This identifying color, like the word Kodak, was selected by Mr. Eastman. Quickly he recognized the pulling power of attractive packaging. He liked the color yellow – and long before the days of scientific color testing, he realized its visibility value. Yellow boxes with easy-to-read, black-and-red lettering have identified Kodak packages ever since.

Only once, in 1914, did the company try to change the basic background color to distinguish a product change. At that time a blue-colored package was introduced – and the trouble it caused is a convincing argument for continuity of consumer recognizability through strong color identification. Thousands of the blue packages had to be recalled; people wanted the film "in the yellow carton." Never since has the company tried to tamper with its basic package color – in fact has continually given it greater emphasis for its strong merchandising value.

Through the years, there have been numerous changes in surface design of the packages to point up product improvements and film designations. Additional colors have been used with the background yellow to designate numerous varieties of films. About 1912 a method of numbering film packages to indicate sizes was adopted. Up to that time the company had printed on the cartons the types of cameras for which each size of film was suitable. But as more cameras were introduced, it became impossible to list them all on the package. An identifying number helped immensely to simplify such designations.

Kodak was also one of the first packagers to assure the consumer of a fresh pack by printing an expiration date on every package – a practice instituted in the early 1900s.

For years Kodak's popular brand of amateur film was known as Eastman NC (non-curling) film. Another package that became familiar to millions was that for Kodak Autographic film designed for Kodak Autographic cameras introduced in 1914, which permitted the user to identify each negative by writing with a stylus on the film through a slot in the back of the camera.

Kodak introduced Verichrome film in 1931 and, gradually since that time, because of the world fame of this trade name as well as the Kodak name, all amateur packages of Eastman film have been brought into one big family headed by Kodak Verichrome in the familiar yellow packages with red-and-black lettering – a family identity that now extends to all Kodak packages.

Because it is the biggest in volume and most universally known of all the Eastman Kodak packages, a Verichrome roll-film carton has been chosen for our cover illustration – but the nomination to *Packaging's Hall of Fame* really belongs to the whole, diverse family of Eastman packages.

The model trademark

Most priceless possession of the company is its five-letter trademark, "Kodak." Beginning in 1887 as a name for a camera and registered in 1888, the Kodak trademark has broadened through registration in classification after classification of photographic merchandise to cover literally more than 35,000 packages. It has been cited over and over again in the United States courts (in trademark cases in which the Eastman Kodak

Evolution of the yellow package

PULLING POWER of package design continuity was quickly recognized. George Eastman identified his NC (non-curling) film with yellow packages as early as 1905. First foil wrappings were adopted in 1912. System of numbering film on package in 1914, helped simplify inventory.

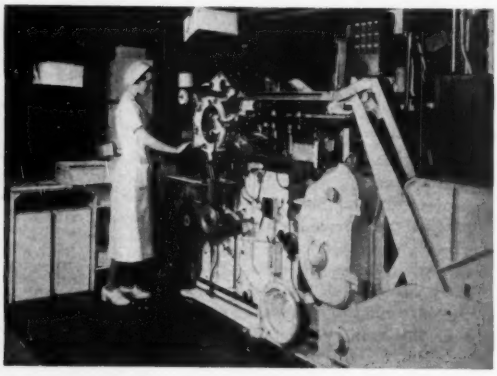
WORLD FAME of the Kodak name and popularity of Verichrome led to the emphasis on this product line—now and for many years the world's largest selling photographic film.

The production of a package of film

BACKING PAPER is slit, die cut to provide spooling flaps and provided with gummed labels in special machine.

INSPECTORS observe every inch of the backing paper before it is transferred to the dark rooms for spooling.

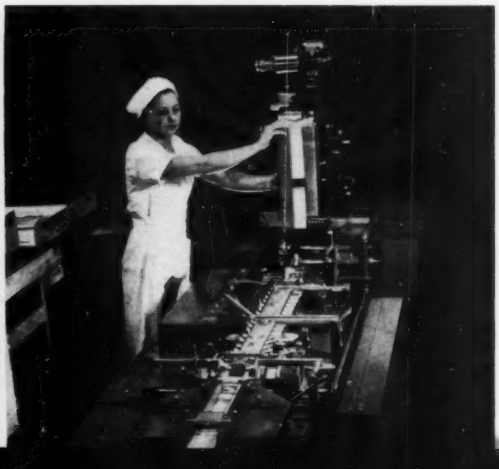
SPOOLING OF FILM must all be done in dark rooms. At Kodak Park there are literally acres of dark rooms, some with as many as 180 women each at a machine like this.



FULLY AUTOMATIC spooling machine threads spools, wraps backing paper with film, cuts both at predetermined lengths and secures the label in one complete operation.

FOIL WRAPS are applied automatically to spooled film. Wraps for tropical packs are completely heat sealed.

AUTOMATIC CARTONERS that set up blanks, insert wrapped film and glue flaps complete packaging operation.



Co. has not been involved) as a classic example of a strong mark. It has been pointed out as a model mark in numerous textbooks and other writings. Romance, mystery and legend have been in the minds of those who have tried to guess its source.

Actually, there is nothing mysterious about it. Kodak came straight from the mind of George Eastman, who made it up. He wanted a name that could not be misspelled, mispronounced or imitated; that could be remembered, associated with his product and registered.

He liked the "firm and unyielding" sound of the letter "K." It was the first letter of his mother's maiden name, Kilbourn. Two "K's" appealed to him more than one and by experimenting with the placement of vowels interspersed with the firm sound of a "d," he originated "Kodak."

When asked about it later, he stated, "I can say that it was a purely arbitrary combination of letters, not derived in whole or part from any existing word, arrived at after considerable search for a word that would answer all requirements for a trademark name."

The company has pursued a policy of vigilant protection of the mark in all parts of the world. Proprietorship has been emphasized at every opportunity with slogans like, "If it isn't an Eastman, it isn't a Kodak." As a result of these efforts, its position as a dominant mark today is considered unassailable and its proprietorship is recognized around the world.

Acres of dark rooms

Not only does photographic film demand the utmost in protective packaging, but the procedure for handling the film must begin in a dark room. Obviously, all early Kodak packaging was done by hand. In a dark room, the film was wound on the spool by means of a small hand-turned winding machine. From 1912 on, each roll was wrapped with foil and put in a carton. The original winding machine is in Eastman House, George Eastman's residence in Rochester, now a photographic museum. William Connors, the first person to spool Kodak film, now retired but still living in Rochester, recently posed for a photo showing him winding film on the original machine as he did during the '90s.

As the business grew, the need for faster methods of production became obvious and during the early 1900s Eastman began developing the first semi-automatic methods for spooling films. Mechanization had reached such a point that fully automatic equipment was in operation for some types of film as early as 1918. Today, machines automatically thread backing paper onto the spool, wind a film together with backing paper, cut the two at a predetermined length and apply a wrap-around label to secure the end at very high speeds. These machines are in a class with cigarette-packaging and chewing-gum wrapping machines as marvels of mechanical efficiency.

These fully automatic machines, however, are used only for certain mass-production varieties of film. Due to the tremendous variety of sizes and kinds of film, both black-and-white and color, to fit numerous types of cameras and for specific types of photographic jobs, the company still uses literally hundreds of semi-automatic machines for the spooling of film. These machines are mechanically fed from roll stock, but require an operator to feed and thread the spools.

The operation of the film-winding machines is one of the most dramatic at Kodak. This part of the operation must be done in air-conditioned dark rooms. On a tour of the roll-film plant, one is led through darkened passages and a series of curtains into rooms where the gloom of pitch blackness is relieved only by the dim glow of evenly spaced photographic safety lights. After the eyes become accustomed to these light sources, the visitor becomes aware that he is in a room where, in some instances, more than 180 girls are working at a like number of semi-automatic spooling machines. There are literally acres and acres of these dark rooms at Kodak Park for the preparation of film to meet the annual requirements of the estimated 26,000,000 families who use still cameras actively every year, the 2,000,000 families who shoot home movies, plus professional and commercial users of photographic products whose requirements now more than match in dollar volume those of the amateurs.

Another striking mechanical operation in the production of a package of film is the specialized equipment for cutting and inspecting the protective Kodak-produced, zein-coated backing paper. Huge cylinders of the paper, preprinted with product identification, space markings and other directions are placed in huge cutting machines which notch the threading flaps at specified intervals and slit the paper into strips with skived edges to give greater light protection when it is spooled.

An example of the meticulous care Eastman takes to assure product quality in every package is the method used for the inspection of backing paper. Before the cut reels of backing paper are sent to the spooling rooms,

POPULARITY of amateur Kodachrome color film would have been impossible without specialized packaging of 35-mm. cartridges with convenient procedure for returning exposed film in mailer for processing.

Infinite variety among 35,000 packages

POPULAR GIFT SET in transparent display box sold in large numbers during holiday season.

PRINTING PAPERS require 20,000 different packages for some 35 different types cut into 1,000 sizes of sheets and rolls.

CHEMICALS in glass and chemicals in cans. Kodak makes 160 different kinds of chemicals for photography, 3,400 different synthetic chemicals for research purposes and 500 different miscellaneous chemicals.

COUNTER DISPLAYS are a must in today's merchandising.

MOVIE FILM requires packages for nine amateur and 40 professional varieties.

each of them is run through a specially devised inspection and rewind machine where an operator checks every inch of footage for possible imperfections.

Completed spooled film is transferred in large tote trays to the wrapping rooms where it is automatically twist wrapped with waxed-paper-backed aluminum foil. For special tropical packs, the spools of film are completely heat sealed in special foil-laminated wraps.

From the wrapping operation, the film goes to automatic cartoning machines where it is placed in cartons (made in Kodak Park's own carton-making plant). After packing into shipping containers, the packaged film is sent to air-conditioned storerooms, ready for shipment to Kodak's thousands of dealers.

Packaging organization

Just as the Eastman Kodak Co. has been a pioneer in protective packaging, upon which the very life of thousands of its products depends, it has likewise been a leader in packaging organizational set-up.

As the company's products increased, volume and complexity outgrew the decentralized operation of departmental packaging activity. In 1938 the first centralized packaging program was established. It consisted of a packaging committee, which, acting in a staff capacity, started coordinating package planning. The committee concerned itself with package appearance, while the physical aspects were left to the individual manufacturing departments.

Lessons in improved packaging learned during the war, the technical aspects of military packages and the desire for more attractive packages in postwar competitive markets stimulated streamlining of the organization and more coordination between the design aspects and the physical aspects of packaging.

In 1945, the company completed a two-year study of outstanding existing packaging operations in a number of nationally known companies for the purpose of streamlining its own packaging set-up. This study represented a striking example of recognition by top management of the need for packaging organization with clearly defined functions. It was the subject* of

(This article continued on page 196)

* See "New Coordinated Program for 35,000 Kodak Packages," MODERN PACKAGING, Oct., 1945, p. 91.

New jobs for spiral wraps

DEVELOPMENT OF AUTOMATIC WINDING AND IMPRINTING MACHINERY GIVES LOW-COST PACKAGING TO MANY STRAIGHT-LENGTH PRODUCTS

Spiral wrapping, which made its initial appearance around 1910 and was originally devised for wrapping coils, is moving into new fields of application.

With the introduction of appropriate conveyors, automatic gluing of the applied wrap and continuous printing methods to identify the finished package, a number of "straight-length" products ranging from carpet-sweeper handles to rugs and metal moldings are now being spiral wrapped.

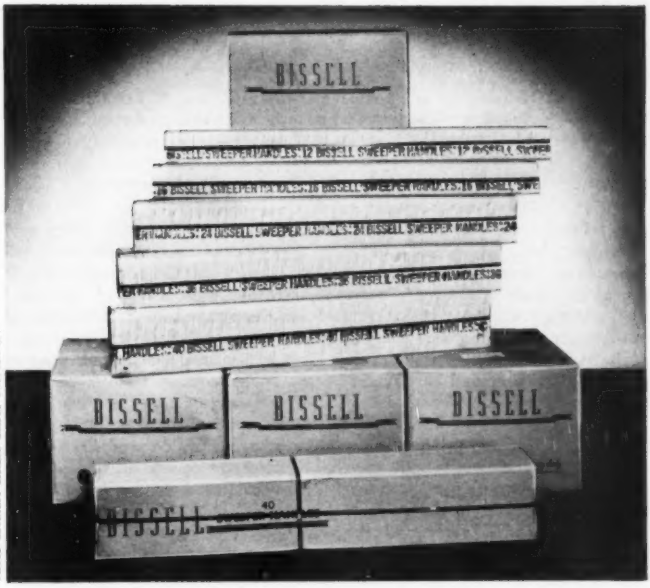
Experience has shown that in many instances spiral wrapping offers important economies over other packaging methods from the standpoint of material costs.

With the glued type of wrap which is now being widely used, the process produces a secure, rigid package which cannot unwind even in the event that the continuous web of wrapping material happens to get severed at one or more points.

Spiral wraps require no large amount of storage space in the plant of the packager and have the further virtue of easy disposal by the receiver of the finished package. When used in conjunction with a rip string, the wraps are quickly and easily removed from the product.

Shipping men are well aware of the fact that damage to packaged goods in transit is not confined to that from external causes. Actually, movement of the product within the shipping package or container is one of the principal causes of damage. Internal movement, in which packaged parts slide together or bump repeatedly, often results in broken parts or at least damage to the finish, making the product unsalable.

By binding the packaged parts firmly together, rather than merely providing a container in which they may shift and strike together, a spiral wrapping dampens vibration damage of the type which may occur when wrapped glass tubing is struck. It is interesting to note that the tubing seldom breaks at the point of impact, but at another point where the vibrations meet.



PHOTOS COURTESY BISSELL CARPET SWEEPER CO.

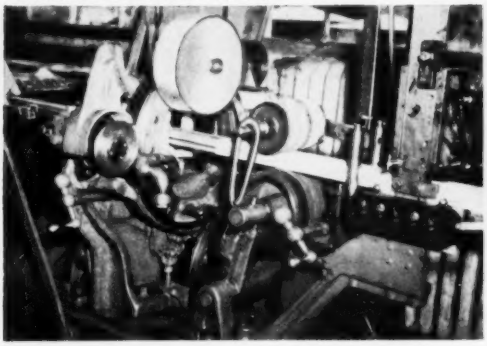
SWEEPER HANDLES are now shipped in bundles (center) spirally wrapped in 110-lb. kraft and imprinted as they are wrapped on automatic machine. Before, in corrugated box (bottom), they were damaged or lost.

Bissell sweeper handles

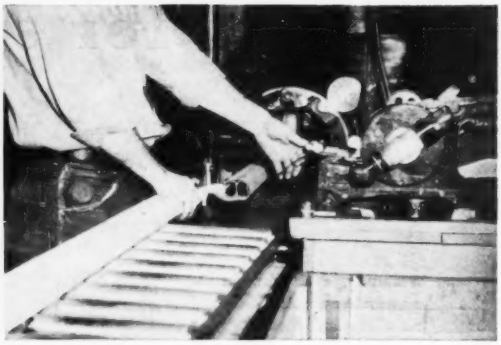
Spiral wrapping recently solved a shipping problem for Bissell Carpet Sweeper Co. in connection with the painted wooden handles used for this company's well-known line of carpet sweepers. Formerly, Bissell packed the handles in corrugated shipping containers in units of 12, 16, 24, 36 and 40 handles. Before being placed in the boxes, end caps consisting of two thicknesses of 100-pt. board were applied to the ends of each stack of handles. As additional protection, one loop of steel strapping was applied lengthwise of the box and another girthwise at the center. With this type package, many of the handles were scuffed in shipment due to movement within the container. Furthermore, there were numerous instances in which the handles hammered their way out of the end of the package and were lost in shipment.

With the adoption of spiral wrapping, these shipping complaints have been virtually eliminated. Before application of Bissell's new spiral-wrapped handle package, end caps consisting of a single thickness of 100-pt. board or 28-gauge steel are placed over the ends of each assortment of handles, folded back so that the wrap holds them tightly in place. Then the bundles are wrapped under heavy pressure in 110-lb. kraft, with one

PHOTOS COURTESY PIERCE WRAPPING MACHINE CO.



METAL EXTRUSIONS up to 14 ft. long at Kawneer, Inc., feed through typical machine that continuously winds and glues kraft strip from roll to protect it from dirt, etc.



ROLLER CONVEYOR facilitates handling wrapped lengths emerging from machine. Gummed tape seals ends. Attachment for continuous printing is behind left hand of operator.

edge folded under and glued as the wrap is applied. This gluing process adheres each layer of the wrap to the preceding layer, producing a more rigid package and preventing any possible unwinding of the wrapper. A single band of steel strapping, applied lengthwise around the bundle, completes the new Bissell package.

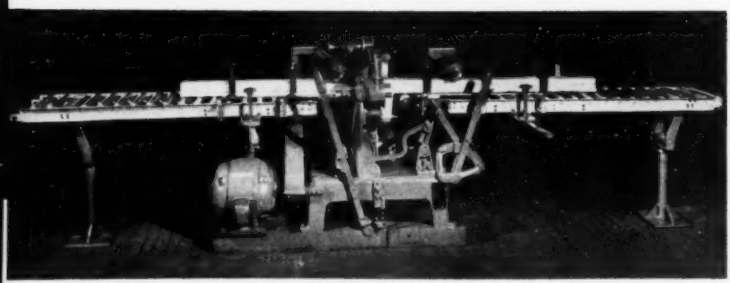
The machine used by this company is equipped with a printing roller which prints continuously upon each package as the wrap is made. Information thus applied to the package includes the Bissell name and the number of handles contained. As the self-inking roller revolves, the printed matter is produced repetitively throughout the length of the package.

Metal and millwork

Kawneer, Inc., a large manufacturer of specially designed store fronts, had a somewhat similar shipping problem involving continuous lengths of metal extrusions or moldings. Originally these moldings, ranging up to 14 ft. in length, were hand wrapped and then placed in wooden shipping crates to protect them against scratching and damage in transit. Manual wrapping required the use of excelsior as a cushioning medium. With the adoption of spiral wrapping, Kawneer has greatly reduced the amount of labor needed and all excelsior has been eliminated. The completed wrap prevents the moldings from shifting within the package and seals out dust and dirt. Use of a printing attachment on the wrapping machine affords company identity of the moldings during shipment and when stocked.

Winton Lumber Co., Martel, Calif., is among the firms now using spiral-wrapping equipment to package various types of millwork, such as knocked-down window frames. Use of a tightly applied glued wrap prevents shifting and possible damage of the lumber during shipment and permits it to be handled and warehoused without exposing the lumber to dust and soiling. An automatic printing attachment can be used with this machine which prints on the package as the wrap is being applied. Straight lengths of 4- to 10-in.-diameter rubber vacuum hose, used for industrial purposes, are now being similarly wrapped in very heavy kraft or kraft with a burlap backing. This type of package replaces the hand-applied burlap bale usually used.

MILLWORK is bundled and tightly wrapped for protection. Ends of bundle are capped with paper or corrugated before wrapping. Continuous gluing prevents unwinding even if the wrap is broken in several places.



Floor coverings

Another relatively new field for spiral wrapping is in the shipment of floor coverings. Special models of wrapping machines have been expressly engineered for this particular application.

A large organization which recently introduced this type of equipment has realized sizable savings on packaging supplies as compared to the previous method. It is currently using a spiral wrap on 4½-ft. and longer pieces of linoleum shipped by truck and freight, and on 4½-ft. and longer pieces weighing under 35 lbs. shipped by express. Wool rugs and pads in the 9-ft. width are also spiral wrapped for shipment by truck or freight, or when the weight is below 35 lbs.

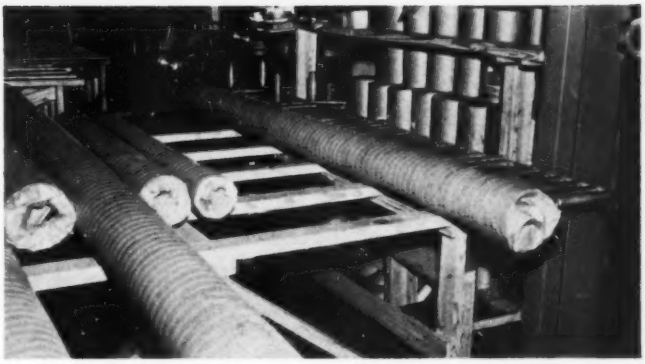
In this installation, two roller conveyors attached to the wrapping machine facilitate movement of the rugs into and out of the wrapping unit, which is designed to wrap material ranging from 4 to 12 in. in diameter. The distance between the guides

limits the minimum roll length to 4½ ft. The advance of the machine is designed to apply a double thickness of paper, using 3-in.-wide tape with ¼ in. folded over on the outside for added strength. The roll is advanced 1⅜ in. with each revolution of the shuttle. Glue is applied automatically to the under side of the fold for a stronger wrap.

Before being started through the wrapping machine, the linoleum is rolled and end capped. Particularly on short cuts, the material must be rolled to a small diameter to prevent crushing. After the material has been rolled and squared, a short piece of industrial tape is applied to hold it tight. Then it is rolled to the capping station, where end caps consisting of 70-lb. flexible corrugated material are applied, with a piece of 3-in. gummed tape around the edge for added protection. Projecting ends of the corrugated padding are folded back into the open core of the roll. Wool rugs, which are rolled tightly and have no core, are capped with a double thickness of kraft paper prior to wrapping. Roll-paper 36 in. wide is used for the outer layer, with a pre-cut 20-by-30-in. sheet as a liner.

Each rug carries a rip cord beneath the wrap to facilitate removal by the customer. It consists of a polished cotton twine which is held on a jig behind the revolving shuttle. The machine operator wraps the cord around the end of the rug for anchorage and the advance of the rug through the wrapping machine feeds the cord automatically. A printed sticker applied to the finished wrap locates the end of the cord.

Experience with this rug-wrapping technique indicates that the protection afforded by the spiral wrap is comparable, if not superior, to the former packing method. From the cost standpoint, elimination of materials required under the earlier method made important savings possible. These items included the wooden boxes employed for rolls of linoleum and the cane poles formerly used with the wool rugs to obtain the necessary rigidity in the finished package, which was hand wrapped. Elimination of these two items represented the major portion of the saving which followed adoption of the spiral wrap. With one wrapping machine, production averages between 25 and 30 rugs per hour, depending upon the method of feeding the work to the wrapping unit. Actual application of the wrapper to a 9-by-12-ft. rug requires only about 14 seconds.



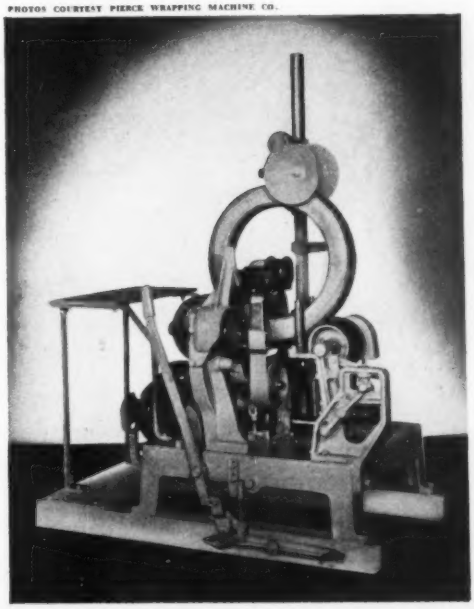
FLOOR COVERINGS, carpet and linoleum, are tightly rolled and spiral wrapped after capping of ends. One large manufacturer has found that this type of packaging affords protection at least equal to previous methods, at much lower cost. Longitudinal rip cords facilitate opening.

Among the numerous other types of straight-length items which are being successfully spiral wrapped are chrome-plated tubing, window shades and Venetian blinds.

In addition to continuous-length products such as those covered in the preceding paragraphs, spiral-wrapping machines continue to be widely used in the wrapping of annular objects such as coils and tires (wrapped in 6 seconds)—a field with which they have been closely identified for a number of years. The possibility of extending this type of wrapping to other annular products not previously packaged in this manner is being studied by various manufacturers.

CREDIT: *Spiral-wrapping equipment, Pierce Wrapping Machine Co., 625 W. Jackson Blvd., Chicago.*

PHOTOS COURTESY PIERCE WRAPPING MACHINE CO.

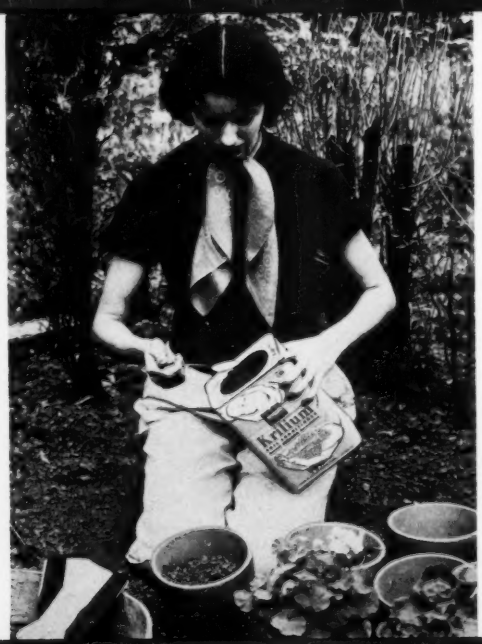


FAMILIAR USE of spiral wrapping is on tires and coiled products. A standard machine such as this will apply a glued spiral wrap to a tire in about six seconds.

Watchband package for re-use on father's office desk

Speidel Corp.'s June promotion for Father's Day and graduation gift buying is a plastic "silent secretary" that serves as a package for a watchband. When the lid is opened, the carded watchband is revealed. Under the watchband the silent secretary contains a book for telephone numbers and a "magic note dispenser" that automatically slides out a piece of note paper when the lid is raised and lowered. An attached pencil completes the unit. The package is molded of oxford gray styrene with gold trim. Specially designed for Speidel, this silent secretary has an advertised value of $6.95 and is being offered to introduce two new Speidel watchbands: the "First Nighter" for men and the "Raindrop" for women. The special promotion also will be featured as Speidel's Founder's Day Offer and will be nationally advertised.

CREDITS: *Silent secretary package made by Braun-Crystal Mfg. Co., Inc., Middle Village, N. Y., using styrene plastic supplied by Dow Chemical Co., Midland, Mich.*



Educational label for gardeners

A metal-end fibre can with a five-color wrap-around paper label has been selected by the Monsanto Chemical Co. as the container for its new Krilium soil conditioner for home gardeners. In developing this new product, a great deal of scientific study went into the method of its application. Gardeners, therefore, had to be given specific, detailed use instructions on the package so that they would derive the proper results of the company's extensive and carefully controlled tests. The two side panels of the label are devoted exclusively to step-by-step use instructions. One side gives directions for three different applications: to start new lawns, to repair bare spots in lawns and to start plant boxes and house plants. The other side explains the product's use for gardens. Front and back panels are identical, featuring two hands—one holding problem soil and the other conditioned soil reproduced in soil color—and the Monsanto M trademark in red.

CREDITS: *Metal-end fibre can, Sefton Fibre Can Co., St. Louis, Mo. Label, Mulligan Printing Co., St. Louis, Mo.*

HISTORIES

Novelty packaging for candies at low cost

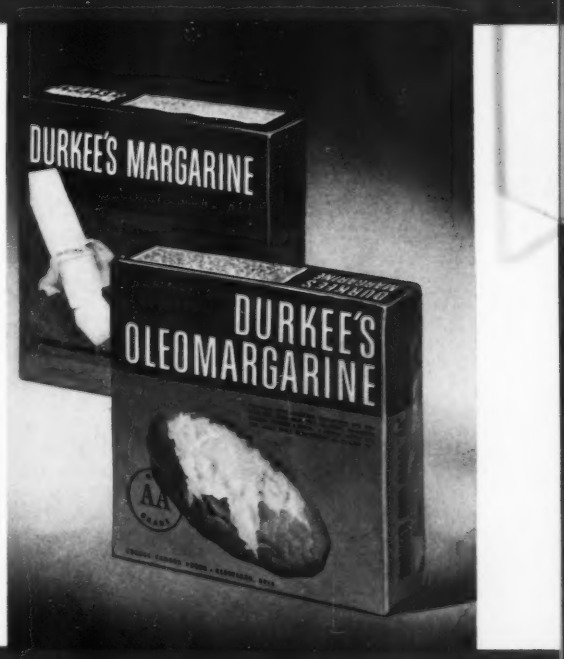
A colorfully printed, die-cut paperboard folder and a heat-sealed cellophane bag are combined to form an unusual package for the Majesty Confection Co.'s Carnival Mix animal hard candies. The package is sufficiently low in cost to allow marketing the product at retail for 10 cents. The plain cellophane bag is filled and heat sealed, then placed in the folder. Two wire stitches at the top hold the bag in position to complete the package. The packaging procedure in the factory is simple and fast, and does not require experienced labor. For shipment and stacking, packages are nested one on the other. The drum on the front of the folder is a cut-out providing visibility of the candies in the cellophane bag. Added appeal is the animal cut-out on back, changed from time to time to maintain child interest.

CREDITS: *Design and procurement of materials, Workman-Powell, New York. Folders, Service Carton Co., Brooklyn. Cellophane bags, Wrapture, Inc., New York.*

Gold-standard margarine

A completely new package has been brought out by Durkee Famous Foods, Division of The Glidden Co., for its four ¼-lb. prints of yellow oleomargarine. The package design ties in with the company's new promotional theme, "The New Gold Standard of Margarine." The wrap is printed in reverse gravure on cellophane against a background of gold. One side features a luscious, appetizing baked potato with a bright yellow pat of margarine melting over it. The other side shows a ¼-lb. section of margarine and describes the "New Gold Standard." Brand and product identity appear at the top in white on a blue band on all four sides of the wrap. With the market opened up for colored margarine, Durkee felt the need for an outstanding package that would have appeal in reach-in cases of self-service stores. This new package, combined with the new slogan, is aimed at stimulating sales in supermarkets throughout the country and is featured in a stepped-up nationwide promotional program.

CREDIT: *Wrap, The Dobeckmum Co., Cleveland, Ohio*



TILTED SURFACES of the cartons provide a full view of the product story no matter how the individual cartons are placed. Arranged horizontally in a space-saving counter display unit, they are easy to take out. They get away from the conventional "notion" type of package such as the old carton illustrated at the upper right corner.

Long-lived display

KLEINERT'S TRIANGULAR SWIM-CAP CARTON IS EASY TO PICK UP AND ELIMINATES THAT EMPTY LOOK IN A COUNTER MERCHANDISER

In the development of its new three-sided attention-getter package and counter display carton for Sava-Wave Swim Caps, the I. B. Kleinert Co. set its sights on four major objectives:

1. A package which would eliminate the folding or creasing of the product.

2. A package constructed so that no matter how it was dropped or placed on the counter, the sales picture and message always would be exposed to the shopper's eye—and one that could be easily pulled from the display bin.

3. A package that would assure continued display when the dealer's stock was reduced to two or three and the near-empty display was destined for disposal.

4. A display piece that would utilize the minimum amount of counter space and present the individual cartons in such a manner as to invite shoppers to pick them up for closer inspection.

These objectives immediately signified a possible departure from the usual type of "notion-department" package and display originally used for the swim cap. The old pink, blue and white carton measuring 6½ by 4½ by 11 in. necessitated folding the cap and the company felt its design arrangement and illustration had a dated look.

The problem was approached first from the structural standpoint to find a suitable individual package form in which there would be no folding of product and a compact counter unit accommodating a full dozen of the individual packages in a small enough base area to win and hold preferred space on the dealer's counter or shelf.

A conventional, slim, oblong carton which could stand on end in the display carton was first considered. This would have eliminated folding of the product, but when the oblong packages were fitted into a blank dummy

display, the idea was vetoed. The close, uniform stacking of the regular oblong packages into a compact bin made it difficult for a customer to pick up an individual carton for closer inspection, it was thought.

The designer began experimenting with different shapes to give easier accessibility. He finally came up with a triangular-shaped carton which is being called "solo display pak." This provides three tilted display surfaces so that no matter how the carton is placed, the product's sales story is always in full view.

When several of these unusual-shaped cartons are placed in a display unit, the result is a broken, uneven stack of boxes easy to pick up, eliminating the static look of even planes. The uneven arrangement also simulates waves—an appropriate effect for swim caps.

The next problem was the surface design for the individual cartons. The final version was adopted after selection of arrangements from a mountain of sketches. Two surfaces of the finished triangular carton are identical. A broad cool green band at the left bears the identifying Kleinert trademark "K," flanked by a photographic illustration of a smart model wearing a Sava-Wave cap. The green band at the right is arrow shaped, pointing to the brand and product name which appear in red and black against a white background. On the arrowhead is a drawing demonstrating the principle of the cap's inner rim. A curved arrow carries the eye from the slogan, "Magic Inner Rim. . . Keeps Hair Dry," directly to the cap's big selling feature.

The third tilted surface of the finished carton differs from the other two in two details. In place of the Kleinert "K" trademark and single large illustration on the left-hand green band are two drawings demonstrating two simple steps for adjusting the cap and a second slogan, "Preferred by Professionals." Over-all length of the carton is 9 in. and its height when placed on any of its sides is 2½ inches.

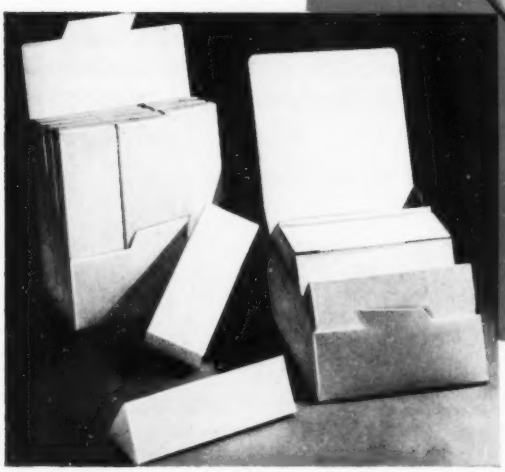
The counter display carton, printed in the same green, white, red and black color combination, holds one dozen of the individually packaged swim caps—placed horizontally. The cover, when raised, provides an upright back panel on which the illustrations and sales messages have been arranged to give maximum visibility. The self-service bin section is pitched to a 60-deg. angle for greater display and easier access. When the counter display's supply is reduced to just a few packages the unusual contour of the individual packages, it is said, helps eliminate the empty look in a counter merchandiser.

And, because the carton is a departure from the type usually identified with "notions," the product's sales potentials in such outlets as drug stores and sporting-goods departments, it is believed, will be enhanced.

Cost-wise, the new package amounts to approximately the same as the Sava-Wave carton it has replaced, it is reported.

CREDITS: *Design, Alan Berni, 7 E. 44th St., New York. Cartons and display unit, Shuttleworth Carton Co., 474 W. Broadway, New York.*

FINAL DESIGN was arrived at through four stages. Old package was discarded because of its shape and "dated" look. Sketches for triangular package surface represent series of experiments to achieve maximum appeal.



DUMMY SET-UPS show comparison of oblong cartons standing on end with triangular cartons placed horizontally in tilted display unit. Oblong cartons permitted packaging without folding product, but were rejected for better display and easy-removal features of triangular shape.

Ever see your product as others see it?

YOUR package, so neat, smart and sales-appealing when it leaves the factory—what does it look like after days or weeks or months on a store shelf?

Is the wrap unmarred? Free of dust and soilage? Are the contents at peak freshness and quality?

If the answer is "No," it will pay you to investigate PLIOFILM—Goodyear's tough, transparent, moistureproof film.

PLIOFILM affords superb protection against practically every hazard of distribution, and it preserves freshness, too. Take a look at these proved PLIOFILM advantages:

PLIOFILM is so strong, it's virtually immune to splitting or ripping—It's moistureproof, keeps wanted moisture *in*, unwanted moisture *out*—It eliminates soilage, drastically reduces returns and rewraps—Its natural transparency adds a quality appearance to any package. PLIOFILM's superior strength allows the use of lighter gauge films. Important economies are obtained because the far greater yield per

COULD YOU USE THESE PLIOFILM ADVANTAGES?

IT'S STRONG!
PLIOFILM produce bags hold up to 10 pounds without danger of breakage.

IT'S LIQUIDPROOF!
PLIOFILM is so moisture-tight, leakageproof, it safely seals pickles, sauerkraut, in their own flavor-making brine.

IT KEEPS MOISTURE OUT!
Crackers, tablets and other hygroscopic products stay crisp and dry in PLIOFILM.

pound of film reduces the cost of each package wrapped.

PLIOFILM is ideal shelf-life insurance, and a specific PLIOFILM is available or can be designed for your specific requirements. Whether you're packaging pickles or coffee—zippers or spark plugs—T-bone steaks or textiles, make sure the consumer receives every ounce of quality intended. It prints clearly in multicolors, handles easily in packaging machines.

The Goodyear Packaging Engineer will be glad to tailor a PLIOFILM package to suit your product. Write Goodyear, Pliofilm Dept., Akron 16, Ohio.

GOODYEAR
PACKAGING
FILM

Good things are better in Pliofilm

3-way protection against air, moisture, liquids

CONVENIENCE and better protection are features of the new "Cut-Quick" dispenser. Serrated edge on lid forms a cutting edge for easy tear-off. The roll of tape turns on the cylindrical traverse tube which locks it inside the container.

Tear-off for tape

ADHESIVE TAPE LOCKED IN METAL CAN REQUIRES NO SCISSORS, CAN'T ROLL AND ALWAYS OFFERS AN UNSTUCK FREE END FOR THE FIRST AIDER

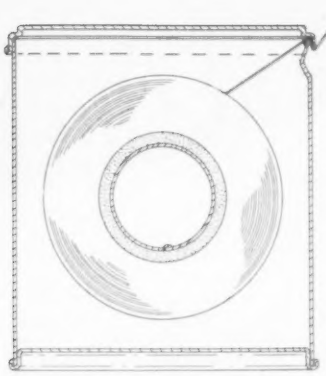
Adhesive tape has come a long way since the early days when it was simply wound on a solid wooden spool, but some problems have remained to plague most users until recently. For one thing, it took some finger-nail-digging to unstick the "free" end of the roll . . . and the usual round-flanged metal spool, once removed from its metal shell, had an annoying habit in moments of stress of rolling off a table and into a corner. Furthermore, good tape was hard to tear and if cut with a knife or a pair of shears it had a tendency to stick to them.

All of these shortcomings, which had their sanitary aspects as well as just plain annoyance factors, seem to have been licked in Johnson & Johnson's new "Cut-Quick" dispenser package, in which the company's Red Cross adhesive tape is now being merchandised.

The basis of J & J's "Cut-Quick" package is a rectangular, hinged-lid metal can closely resembling that used for its Band-Aid adhesive bandages, with the addition of a hole through the center. A roll of adhesive tape is suspended in place inside the can, free to turn on a traverse cylindrical member which serves as an "axle" for the tape roll.

In using the new dispenser package, the consumer opens the hinged lid and pulls the free end of the tape until the desired length has been unrolled, then closes the lid firmly with a finger. Closing the lid clamps the tape between a serrated edge of the lid and the turned edge of the can body, so that an upward, slightly angled pull on the adhesive tape tears it neatly.

Next time, the user finds that the free end of the tape has remained clamped between the serrated edge of the lid and the edge of the can, with about ⅛ in. of tape turned down over the can edge, so that there is no



SECTION through Johnson & Johnson's dispenser package shows how tape roll, on paperboard tube core, is suspended by metal traverse tube. Traverse's ends are curled and locked flush to front and back faces of the can.

problem of unsticking the free end.

The roll of tape itself remains suspended inside the can at all times until completely used.

J & J has considered continual packaging improvement as a highly important factor in encouraging widespread use of adhesive tape. A sample of an early roll (used in 1886) is merely a turned solid wooden spool such as is used today for a fly-casting line and the product was called "Surgeons Rubber Adhesive Plaster." However, by 1891 a flanged metal spool was in use, packaged in a tuck-end folding carton.

The job of separating a strip of tape from the wound roll was made easier for tape users in 1921, when the company devised machines to control the winding tension.

In 1926 the company developed a rack-roll package for hospitals, said to have been so enthusiastically received that to this day almost all adhesive-tape sales by J & J's Hospital Division are in the rack-roll packages.

A typical rack-roll package might consist of 12 one-inch rolls, or 24 half-inch rolls, or a combination of the two widths on a single rack. Securely placed in a convenient location, such an array makes it easy for doctor or nurse to pull out the desired length of either width, using the other hand to wield a scissors.

The company introduced its familiar "spool-and-shell," two-piece metal container in 1928. The improved convenience and protection over the cardboard outer carton previously used caught on so quickly with users that within a short time almost 100% of adhesive tape produced for consumer sale was in spool-and-shell containers.

The new "Cut-Quick" package, lithographed in red and blue on a clean white background, solidly identifies J & J's tape with the rest of the company's line of first-aid supplies. Except for the traverse member running through the can, the tape dispenser resembles the familiar package used for Band-Aid adhesive bandage. Engaging of the slightly flanged lid with beaded base permits the dispensers to be stacked safely for display without slipping.

Each dispenser carries simple five-step instructions for use on its lid. With light-face, sans-serif lettering in blue and numbers in bold-face red, these instructions read: "1. Pull out tape. 2. Close lid. 3. Hold lid down firmly. 4. Grasp tape near cutting edge. 5. Quickly rip tape upward."

Grasping the tape near the cutting edge is to be preferred to tearing by a pull on the extended free end. This is likely to be obvious, even to a person handling the package for the first time, but to forestall any possibility of confusion, J & J took pains to place the instructions, together with the words, "Cut-Quick," in a prominent position. Red lettering on one of the sides of the dispenser calls further attention to the directions on the lid.

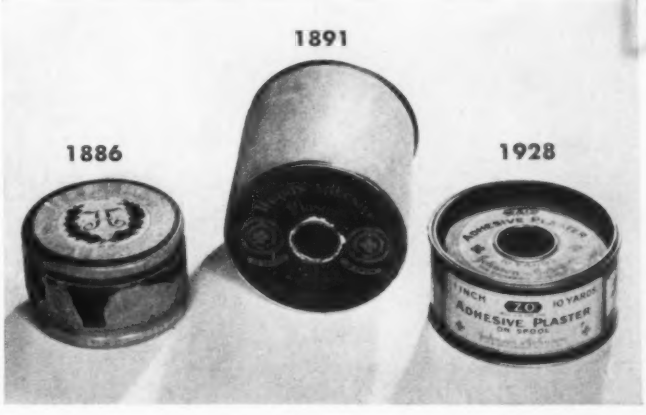
With its deeply-formed, dust-tight lid, well-rolled body and bottom seams, the white "Cut-Quick" dispenser container seems a major forward step in packaging convenience and protection for the product.

Adhesive tape in the "Cut-Quick" package is being introduced by J & J as one of the features of a nationwide "New Products Parade" promotion. In addition to both Red Cross Adhesive Tape and Red Cross Plastic Tape in the new package, the new J & J products include a complete package line of Band-Aid Plastic Strips and a package of assorted Band-Aid Plastic Strips, Patches (square) and Spots (circular).

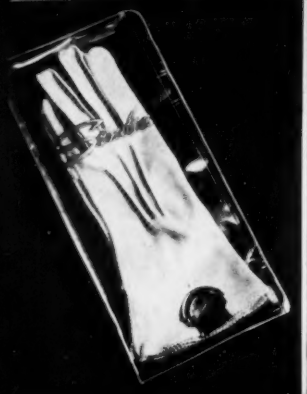
The afternoon Kate Smith Television Show and full-page color advertisements in *Life, Look, Saturday Evening Post, Collier's, Woman's Home Companion* and *American Magazine* are telling consumers about the new products. To enable druggists to tie in with the national advertising, J & J is offering a window banner, store pennants and a self-service counter merchandiser that pictures Kate Smith and quotes her recommendation of the products.

CREDITS: *Metal containers, J. L. Clark Mfg. Co., 923 23rd Ave., Rockford, Ill. Winding machine, Cameron Machine Co., 61 Poplar St., Brooklyn, N.Y.*

THREE PREDECESSORS of Johnson & Johnson's latest package for adhesive tape are the solid wooden spool (left) used in 1886, the flanged metal cylinder (center) brought out in 1891 and the familiar two-piece metal spool-and-shell container which was introduced by J & J in 1928.



PACKAGING



1

2

1 The Eisendrath Glove Co. not only protects gloves from shopwear, but keeps its brand name prominently before the customer by the use of this smart-looking polyethylene pouch for its gloves. The Sendra brand name appears in gold scrip outlined in black against an over-all fine-dotted screen, giving the envelope semi-transparency. Pouch, Milprint, Inc., Milwaukee.

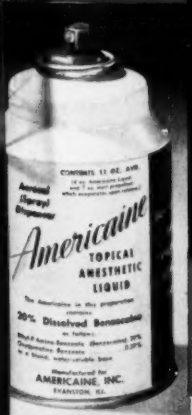
2 One of the newest products to take advantage of the one-way, no-deposit bottle is Cock 'n Bull Ginger Beer, a soft-drink mixer made by G. F. Heublein & Bro., Inc. All reactions indicate, according to the company, that this one-trip bottle, available at no increase in price, will be outstandingly popular. Bottle, Owens-Illinois Glass Co., Toledo, Ohio. Label, Libbie Printing Co., Boston, Mass.

3

3 Flash-Dri utility towels, a new product of the Saddle Rock Sales Co., are the first of such items to be packaged for supermarket merchandising. Two large solid-colored towels come in an attractively designed and informative cellophane envelope aimed at stimulating impulse buying. Package, Oneida Paper Products, Inc., Clifton, N. J.

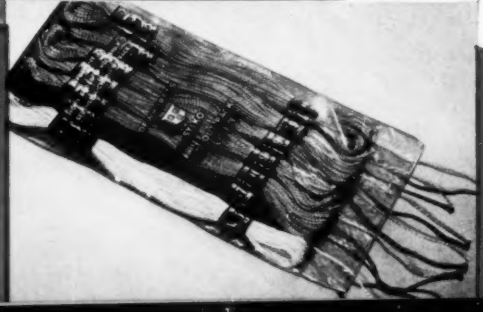
4

4 The Enzo Jel Co., in marketing a new dehydrated powdered tomato aspic, has taken care to explain on its package for Enzo Tomato Aspic just what the product is and how it is used. Copy clearly points out "Complete—Just add water" and "Serves six." Design, Jim Nash, New York. Carton, Edison Folding Carton Div., Gaul & Ingalls, Chicago.



5

5 One of the first uses of a pressurized aerosol container in the medical field is for Americaine topical anesthetic liquid, product of Americaine, Inc., used by physicians in industrial and office first aid for relief of surface pain and itching. Its quick, sanitary spray-on application makes it unnecessary to touch areas of pain. "Spra-Tainer," Crown Cork & Seal Co., Baltimore.



6

6 A practical and convenient container developed in England is this pull-out pack for Dewhurst's "Sylko" embroidery threads. Seven skeins fit side by side in this three-color printed cellophane bag. It is crimp sealed, with the free ends of the skeins protruding through one end. Lengths of thread are simply pulled out as required and are never completely taken out of the bag. Package, Colodense, Ltd., Bristol, England, using British Cellophane, Ltd., cellophane.

PAGEANT

7 This quart-sized glass bottle of Vani-Sol bowl cleanser, product of National Laboratories, Inc., provides a good example of fine lettering achieved by applied color labeling. Acid-resistant red and white colors are used and complete directions for product use are also fused on the bottle. ACL bottle, Anchor Hocking Glass Corp., Lancaster, Ohio, Lithographed screw cap, Armstrong Cork Co., Lancaster, Pa.

8 Colorado Milling & Elevator Co., has brought out a new large-sized addition to its Ranch House family of packaged dried beans and peas—a 5-lb. quantity packaged in a re-use polyethylene bag. The same full-color rope-swinging cowboy design used on the smaller cellophane packages appears on the new bags. "Shellene" bag, Shellmar Products Corp., Mt. Vernon, Ohio.

9 Four of Charms Candy Co.'s popular-priced candies are now packaged in a new 15-oz. package formed of a multiple sheet composed of foil, paper, wax and foil. The printed material, supplied in roll form, looks like the solid aluminum formerly used, but has considerably more rigidity and is reported to be more economical of freight and plant storage space. "Ply-foil" material, Reynolds Metals Co., Louisville, Ky. Package former and filler, Wright Machinery Co., Durham, N. C.

10 By using heat-sealed moistureproof packets of laminated foil, acetate and vinyl, Naco Fertilizer Co. has solved the problem of supplying precise pre-measured quantities of its Nurish plant-food concentrate for making 2 gal. of liquid fertilizer. The corrugated dispenser carton holds 32 packets for mail-order sale. Packages of smaller units are available for variety stores. Packets made by Mason-Keller Corp., Roseland, N. J., of material supplied by Shellmar Products Corp., Mt. Vernon, Ohio. Corrugated carton, D. C. Feisner Container Co., Orange, N. J.

11 The Holland American Wafer Co. believes that refreshing new package designs provide new interest for well-known food products and appeal to shoppers who are looking for "something different." Their two newest designs are these duplex cellophane bags for Dutch Twins sugar wafers and coconut sugar wafers, with brand and company name in smaller type that can easily be spotted and recognized on the supermarket shelf by the shopper. Packages, Milprint, Inc., Milwaukee.

STRIKING in its simplicity, bold in its colors, the new standardized Holsum wrapper utilizes a brilliant orange-red background, with logotype in deep blue on white, highlighted by yellow stars. Brand name is visible with the loaf in any position.

Holsum united

A COLORFULLY DESIGNED NEW STANDARD WRAPPER LINKS THE MERCHANDISING EFFORTS OF 43 INDEPENDENT BREAD BAKERS IN A FRANCHISE GROUP

Holsum Bread in a brilliantly executed new wrapper is setting new sales records for 43 independent bakeries cooperating on a strong, unified advertising campaign built around the eye-stopping package. The story behind this broad, imaginative program once again confirms the importance of superior package design in today's highly competitive food-merchandising picture.

Literally hundreds of brands of bread are sold in the U. S. market. Most of these are marketed within a relatively limited sales area surrounding the point of manufacture. Bread is a perishable commodity and cannot be stored for long periods or transported economically over great distances. It must be marketed within a few hours after it leaves the ovens.

There are two classes of producers who supply the nation's bread wants. Independent wholesale bakers supply individual communities or relatively restricted areas with their private brands of bread. This accounts for the large number of brands and the confusing variety of wrapper designs found in most markets. In competition with the independents are large corporations with strategically located baking plants, offering nationally advertised brands in standardized wrappers.*

* See *Packaging's Hall of Fame* story, "Wonder Bread," MODERN PACKAGING, May, 1952, p. 108.

There are several brands of bread produced by independent bakers under an affiliate or franchise arrangement. Holsum bread is one of the most widely distributed brands in this group.

The widely known Holsum brand, now one of the largest selling, was originally introduced in 1909. It has

ACTUAL SAMPLE of new standard wrap shows why the package is a color standout in bread racks. Note repetitive use of Holsum trade name, which makes bread identifiable from any angle when on display in stores. SAMPLE COURTESY SANIWAX PAPER CO.


Holsum
Enriched Sliced WHITE BREAD
Holsum
Enriched Sliced WHITE BREAD
Holsum

HOSTESS

Enriched Sliced WHITE BREAD

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Enriched Sliced WHITE BREAD

HOSTESS

Enriched Sliced WHITE BREAD

been promoted by The W. E. Long Co., Chicago, pioneer bakery service organization, since it first appeared on the market as an unwrapped loaf with a tiny Holsum label pasted on the top crust.

At the time wrapped bread was first introduced (by a client of The Long Co.), it was hoped that more and more bakers would adopt the brand in all sections of the country until national distribution was achieved and the bakers could muster a combined advertising effort that would compete with the campaigns of the large corporate bakers.

The bakers were independent in more than name, however, and many adopted changes of procedure, including private modifications of the wrapper design.

Holsum did achieve what amounts to national distribution, however. At present it is produced by approximately 80 baking concerns all over the United States and Canada. But until recently it appeared on the market in over 150 different wrappers.

For each wrapper design there was an individualized advertising campaign of purely local scope. Under this system each Holsum baker bore the full brunt of preparation costs for advertising materials tailored to suit his private wrapper design.

During recent years more and more Holsum bakers came to realize that they would have to have unification in order to meet large-scale competition on an equal footing. Many of them wanted to take group action, but a long-range program was needed to help them eliminate the enormous duplication of costs which kept them in an unfavorable competitive position.

The first definite action toward unification was taken at a meeting in Chicago in March, 1950, attended by a group of Holsum bakers. Together with representatives of The Long Co., they studied the opportunities for more effective newspaper, radio, television, outdoor and point-of-purchase advertising available to any group of bakers who would agree on a joint program. It was realized then that the key to such a program would have to be a strong, new, bread-wrapper design which would be standard for all bakers participating in the program. The fact that each was using a different wrapper design made costly plate changes necessary each time the loaf was reproduced on advertising material and it seriously limited the use of the loaf reproduction as an element in advertising illustration.

Interest in the program ran high and a second meeting was called in June, 1950. The Long Co. then presented a comprehensive advertising proposal to a large group of Holsum bakers. As a result, the bakers authorized the agency to select a designer who could create a new Holsum bread wrapper. They made only one specification—that the design must satisfy the bakers interested in unification and at the same time meet the competitive conditions of the diversified markets they represented—an exacting assignment in package design.

The designer was given extensive background material on bread-wrapper design, compiled by the W. E. Long Co. from the time wrapped bread first appeared on the market. He was given a free hand to develop the strongest possible design without being restricted to any of the accepted notions of what a bread wrapper should look like—the almost inflexible precedents which often have prevented bread-wrapper design from keeping pace with other packages in the general food field.

Before attempting to create the new Holsum wrapper, the designer visited many cities to study, at first hand, bread-merchandising problems. He surveyed bread displays in stores all over the country—made color photographs of his findings. He called on many Holsum bakers and with them studied competitive packaging and display.

The finished design was presented to the Holsum bakers at a special meeting in Chicago in December, 1950. At the same time, advertising, merchandising and promotional details were revealed. The new wrapper and the whole program keyed to it were an immediate hit. When the bright, new, orange-red wrapper was unveiled, the bakers—many of whom had heretofore resisted even minor changes in their

PREVIOUSLY, the Holsum bread wrapper had many variations among independent licensees and, in no case was it a standout when stacked with competitive brands on retail bread counters.

NOW the Holsum bread display looks the same in stores in 43 cities. It stands out brilliantly both through color and prominent use of the brand name.

ADVERTISING introducing the new wrapper stresses the "new look" and use of improved polyethylene-wax-paper coating. Red second color was used in many of the newspaper ads.

BILLBOARDS are powerful with the simple, memorable design and color scheme of the wrapper. Standardization of the design has made possible national advertising for first time.

private wrappers–accepted the revolutionary design at the first showing.

The new wrapper and the unified advertising program built around it were enthusiastically approved and are now in use by 43 Holsum bakers.

The key to the success of the new Holsum wrapper is a strong, dynamic color with the highest possible attention-getting values. The brilliant orange-red color is carried over the ends of the package–a part of the loaf which the designer felt had been much neglected on most bread wraps.

The Holsum logotype, in deep blue on a white rectangular background with rounded corners, appears on the package in two sizes, with lettering large enough for easy readability. It is repeated on all surfaces of the package, even the end seals, so that brand identification is positive, no matter what the position of the loaf on the bread rack.

Stars of four sizes, in a rich, buttery yellow color, adorn the package. They are distributed in such a way that they do not detract from the clean-cut appearance of the package, but actually dramatize the logotype.

The only wording on the wrapper is the phrase, "Enriched Sliced White Bread." The copyright data, the company name of the baker and the listing of ingredients appear in six-point type in an unobtrusive line near the end of the loaf. The net weight is printed in somewhat larger type near the logotype.

Originally applied only to the regular white loaf, the new wrapper design has already been adapted to many variety breads and to a large number of specialty items such as doughnuts, cakes, rolls, Brown 'n Serve and sweet goods of all kinds. No matter what the adaptation, the distinctive design is immediately recognizable and retains its lively appeal.

Although the original design was developed for an opaque wrapper, it has already been adapted to cellophane. In this adaptation, the logotype and stars are bordered with the "Holsum red" as are the wrapper ends and the end labels. For the opaque wrap now used, the advertising points out the fact that the new package offers the last word in protection with its "plastic-coated wrapper" (polyethylene added to the regular wax).

Certain problems of bread display largely determined the kind of design and the color used in the new Holsum wrapper. In the words of the designer, "Our first job was to get a design which would be *seen* no matter in what position it was stacked on the shelves."

Studies in the country-wide markets revealed that loaves of bread were displayed in almost every conceivable position. Most often they are displayed with the end toward the shopper and the end is, in most cases, the weakest part of the package. The studies also revealed that most bread-wrapper designs are a hodgepodge of many small elements in a variety of weak colors, thus confusing the eye–in reality, camouflaging the loaf. The new design for Holsum overcomes these handicaps.

The all-over background color with a clear logotype on every surface of the package allows the loaf to be displayed in every position without loss of brand identity or attention-getting power. The orange-red was used because it is one of the most dynamic in the whole color range. It is a warm, so-called "edible" color and can be reproduced in newspaper, outdoor and point-of-purchase advertising with powerful effect. It was found, too, that this color would show up the loaf with definitive clarity on black-and-white television–and with real "smash" on color TV.

"Holsum red," as the basic color is called, along with the other basic design features, has been carried over into the point-of-purchase advertising materials. No matter where the shopper looks in the store, she is

confronted with the splash of color, clean-cut logotype and brilliant stars.

Holsum bread in its new wrapper has been on the market less than nine months in most cities and yet the bakers have reported sales increases of 15% to 35% and even higher. These increases have held up long after the end of the introductory promotions.

One prominent Alabama bakery with several plants decided to launch the new Holsum in addition to their regular brand which they had been building up for 20 years. They planned to withdraw the old brand gradually from the market, expecting that the switch would take from six months to a year. Within two weeks they were able to discontinue the old brand altogether and show an outstanding sales increase besides.

Unification of the Holsum bakers has made itself felt in other ways. Sharing of preparation costs has made it possible for the bakers to use the nation's top advertising artists, radio and TV talent. It has made for effective teamwork between bakers during the launching of the program in the various individual markets. Sales managers and supervisors from various Holsum bakeries helped each other during introductory campaigns. It was possible in this way to put a sales specialist on each delivery truck during the introduction of the new Holsum wrapper to the market. These extra sales personnel were able to saturate the stores with point-of-purchase materials, do contact work with many consumers in the stores and thoroughly indoctrinate the grocers with information on the wrapper.

Agreement on a common wrapper design and advertising program has made it possible for the unified Holsum bakers to match the advertising power of many of the nation's leading producers of nationally advertised products. Previously, their scope had been limited to the size of their individual, local advertising efforts.

In the best modern practice, the bakers have carried the wrapper design and the distinctive color into the decoration of their route delivery trucks. The standard package has made it possible to use truck decalcomanias showing the wrapper broken open and the slices of bread in use—a repetition of the usage on outdoor posters and in newspaper ads.

"Holsum red" and the standard logotype were utilized on brightly colored shirts worn by the route salesmen during introductory campaigns. Holsum colors and insignia are also used on the salesmen's uniforms.

LOGOTYPE is equally applicable to trucks, stationery, bill heads, etc. "Holsum red" and insignia are used on uniforms of the Holsum salesmen. Many markets have reported increases in sales of from 15 to 35%.

Quality standards for Holsum bread marketed in the new wrapper have been accepted by the bakers. Prior to the introductory campaign in each market, Holsum and all competitive brands of bread were impartially scored by the Products Control Laboratory at The W. E. Long Co. to make sure that Holsum is tops in quality as well as packaging.

Introductory newspaper ads, usually in color, feature the new package both open and closed, in several different positions. Radio spot announcements described the new wrap.

The Holsum Unification Program is administered by a board of trustees elected from among the participating bakers. The trustees work through an executive committee which is in constant liaison with The W. E. Long Co. Rights and title to the wrapper design are vested in the group of Holsum bakers through the trustees.

High praise for the colorful new wrapper and for unified advertising comes from the Holsum bakers participating in the plan. Many say the program is the strongest they have ever used. Others tell how the wrapper and the profuse variety of merchandising aids have built up the enthusiasm of their salesmen. Still others report that grocers and consumers are well pleased with the wrapper and the advertising.

National recognition of their brand and of the unified wrapper is one of the chief long-range aims of the Holsum bakers. They hope to persuade other bakers, not now participating, to join them, thus broadening distribution, multiplying the benefits of unification and adding strength to the group.

CONSUMER now has no trouble picking Holsum from among competitive brands in the store.

A prominent Indiana baker puts it this way: "In the past 20 years this country has become a roving nation. It would certainly mean something to me if those who have been traveling in my associate's market and seeing his advertising would move into my territory and react to my brand as though meeting an old friend."

Judging from the sales results reported thus far, the new Holsum wrapper is doing just that—keeping old friends and making plenty of new ones for the unified Holsum bakers.

CREDIT: *New wrapper design, Egmont Arens, 480 Lexington Ave., New York.*

Relaxation and enjoyment are implied in this appealing window display for Frankfort Distillers Corp.'s Paul Jones blended whiskey. A pair of cocker pups, one bearing his master's slippers and the other an evening paper, lead to the theme of the display: "Now let's get the Paul Jones." The unit is full-color lithographed on paperboard. The same cockers appear on other units, including a merchandising floor stand. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

A die-cut paperboard arrow inserted at the front of this display carton assures the dealer of the "baker's dozen" of I. Sekine Co.'s Sno-Tip "tipped" tooth brushes he receives in this unit for the price of 12. Individual cellophane-wrapped packages are designed in blue and gold, matching the display carton. The "I" dot in the Sno-Tip lettering simulates the gum-massage feature of the brushes. Design, William V. Schusterman, New York. Display carton, The Lord Baltimore Press, Inc., Baltimore, Md. Individual cartons, J. E. Smith Co., Baltimore.

DISPLAY

A six-piece display unit promoting The J. B. Williams Co.'s Skol suntan lotion consists of one 28 by 40 in. easel window card, three 9½ by 12¾ in. counter cards and two pyramids—all full-color lithographed on paperboard. Again this year there is a promotional tie-in between Skol and Catalina swim suits. Displays, Industrial Lithographic Co., Brooklyn, N. Y.

Champion arch supports made by The Ohio Truss Co. are merchandised in this easy-to-set-up corrugated display box provided with a riser panel and a drop front panel to which point-of-sale advertising labels are attached. The box is printed in solid black, except for lettering and figures. Display, The Hinde & Dauch Paper Co., Sandusky, Ohio. Individual boxes, The Seasongood Folding Box Co., Harrison, Ohio.

An amusing, inexpensive display piece, called the "Minute Displayer," is used by Resistol Hats, Inc., to promote their men's hats. The display, suitable for dealer's hat counters and windows, has the features of a man's head printed on a flat sheet of double cover stock paper measuring 19 by 24 in. The die-cut elements separate from the sheet in the same manner as die-cut paper toys and can be assembled in less than a minute by locking the ends of the sheet together to form a circular display on which a hat is placed. Display, The Egan Printing Co., Dallas, Tex.

The face of this three-dimensional action display for Sir John Schenley Whisky is molded from one piece of printed acetate. A top-hatted globe, a raised glass and a tilted bottle stand out from the surface of the unit. The globe, which is illuminated from behind, has a lettered inner revolving drum that flashes a sales message on the globe. Display, L. A. Goodman Mfg. Co., Chicago, using Tennessee Eastman Co.'s acetate.

GALLERY

Speidel Corp.'s spectacular "Parthenon" display for watchbands combines action and lighting with lithographed paperboard and plastic. Four full-color transparencies form the revolving centerpiece for the vinyl stage. Inside plastic pillars, each holding four watchbands, also revolve. Cut-out lettering on the facade is back lighted. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

Otis E. Glidden & Co., Inc., is making the most of its "half-bottle" carton design for Zymenol, a brewers' yeast laxative, by providing a display card that shows how to lock two cartons together for display. One carton becomes a dispenser for promotional folders. A protective folder for the card shows various display arrangements. Display, Don's Process Co., Milwaukee, Wis.

Flowers from Hawaii

PHOTO COURTESY UNITED AIR LINES.

PLASTIC VIALS enclose stems of these vanda ("baby") orchids, being prepared for air shipment from Hawaii to the mainland. Clipped to an insert, the orchids are packed 60 to a box. Some firms wrap stems in cotton or foil, ship 12 to 800 to the box.

Export of flowers and foliage is one of the most promising of Hawaii's infant industries. In 1950 it brought Islanders an estimated $1,300,000 and the totals for last year and this year are expected to be considerably higher.

The industry owes its existence to the successful development of packaging techniques that overcome a bewildering array of obstacles presented by the problems of mass-scale export over long distances at five-mile-a-minute air speeds.

Its success is a tribute to the power of packaging to team with modern transportation and merchandising techniques to create wholly new industries. The lessons are widely applicable.

Among the problems encountered are those of protecting an extremely fragile product against crushing; temperature extremes at semi-tropical way stops and at high altitude; rotting, fading and other plant ills. In providing the high level of protective packaging required, the flower grower is sharply limited by restrictive factors that place the utmost premium on packaging ingenuity. He must reduce weight and shipping cube to a minimum to avoid prohibitive shipping costs and he must economize in the selection of packaging materials and methods to permit profitable delivery of exotic blooms and foliage at a price mainland customers are willing to pay.

The fact that the Hawaiian export flower business has grown rapidly to its present size, and continues to grow, is evidence that many of the sharp challenges to packaging skills have been met. The discussion that follows describes in detail how some of the challenges have been overcome and, at the same time, indicates the many problems yet to be solved or subject to improvement.

In Hawaii there are more than 100 retail florists shipping gift packages regularly and some 25 or more shippers who specialize in shipping to mainland retail and wholesale florists. Each has his own concept of a proper pack and package and what the function of the package should be. Considerable experimenting has been done with different types of packs and boxes. There are an almost endless number of packages in use, varying in size, shape and construction.

The greatest progress in the development and stabilization of packing and packaging techniques has occurred with the spiraling sales of the vanda joaquims baby orchids. Even

* Market Economist, College of Agriculture, University of Hawaii, Honolulu, Hawaii.

BOOMING ISLAND INDUSTRY DEPENDS ON PACKAGING AND AIR TRANSPORT, AND IS TEACHING VALUABLE LESSONS IN PUT-UPS FOR PERISHABLES.

By Edward L. Rada*

so, methods of packaging vandas differ widely among shippers. Most vanda shippers use either the cotton pack, lapel pack or foil pack.

The cotton pack is perhaps the most common among shippers and consists of wrapping vanda stems in cotton and separating the blooms by strips of cardboard. The firm known as Flowers of Hawaii, Ltd., largest shipper in the islands, packs 50 flowers in each box, as compared with half that many per box in the foil and lapel packs.

In the lapel pack the stem is wrapped in cotton and placed in a plastic tube which may be plain in color or tinted. A pin on the back of each tube is attached to a waxed paperboard insert. Flowers of Hawaii places five vandas on each cardboard insert while Crossley Associates, the second largest shipper in the Islands, ordinarily places 10 flowers on each insert. The inserts are packed tightly into boxes holding from five to 20 inserts. The price of the lapel-packed vanda is higher than either the foil- or cotton-packed flower because of higher material and shipping costs.

A sheet composed of foil-backed cellulose wadding is used in the foil pack. The sheet is dipped in water, reportedly absorbing 16 times its own weight. Stems are slipped through holes in the sheet and imbedded in the wet cotton. A two- or three-vanda corsage can be readily assembled using the foil pack. Single vanda corsages in a foil pack are aligned and packed the same as in a lapel pack.

Shipping problems of vandas

Some of the severest shipping problems have occurred with the vanda orchid. It is estimated that perhaps as high as a third of the vandas shipped were never paid for because they were unfit for use upon arrival.

Fading or "whiting out" and rotting have been the major causes of spoilage. Fading is the more serious of the two and describes a condition in which vandas lose their varied colors and eventually turn uniformly white. Rotting, as can be imagined, results in a uniformly brown color and a completely decayed flower. Fading is most prevalent in the spring and summer months, while rotting is most likely to occur in the winter and early spring months when demand is at its peak. Plant physiologists and pathologists at the University of Hawaii have devoted much time to exhaustive studies of these problems.

"Whiting out" generally happens when an old flower or one with the pollinai knocked off releases ethylene gas. The gas pervades the container and turns all flowers white. Gentle handling, discriminate grading and restricted numbers per box are obvious safeguards.

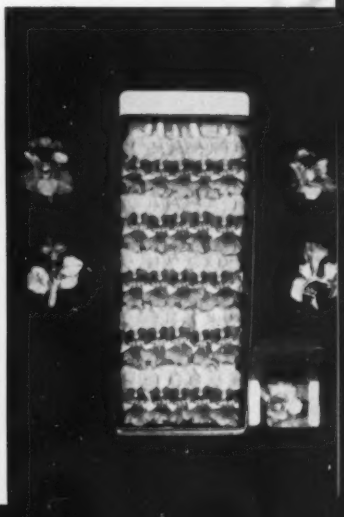
The University scientists have found that a small amount of brominated charcoal placed in a box of a dozen vandas definitely retards the fading process. At present vanda prices, this treatment is not considered economical for commercial us-

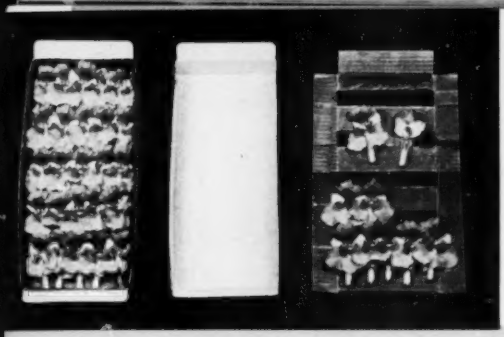
ANCHORED ARRANGEMENT assures compact protection of this floral set of Hawaiian wood roses, sage grass and fern-tree slab. Air shipper's special problem is to hold down weight and cube.

DELICATE BUT SAFE, a dozen anthuriums are shown placed on V-shaped insert platform prior to padding with sheets of cotton. Single flower shows balloon reservoir of water at the stem.

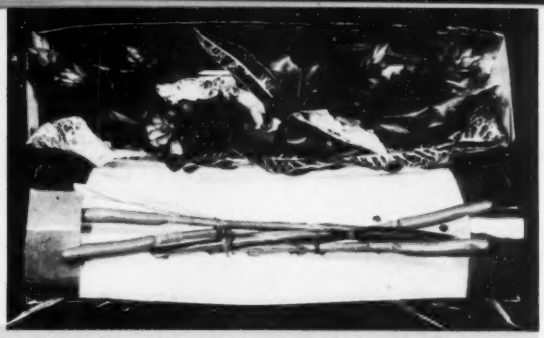
VANDA PACKS. At left, front and rear view of lapel pack with plastic tube. Center, box of 25. Right, front and rear view of foil pack; bottom right, window carton.

PHOTO COURTESY FLOWERS OF HAWAII, LTD.





METHOD OF MOUNTING lapel pack on waxed paperboard insert is shown along with empty carton and finished pack. The hazards of damage increase with the number of vandas packed in a single container.



FANCY PACK. Six ginger blossoms are tied with green to leaves and framed with a layer of colorful croton foliage. Bottom of picture shows how stems are brought through cardboard insert, tied, stem-capped with water-filled balloons.

PHOTOS THIS PAGE COURTESY FLOWERS OF HAWAII, LTD.

FOR SHIPMENT, two cartons, each of which will hold 25 lapel-, 25 foil- or 50 cotton-packed vandas, are packed in a specially designed corrugated shipper. Note appeal for careful handling.

age. The rotting or browning of vandas is thought to be caused by a fungus that is especially active during the wet winter and early spring months. No positive cause or cure has yet been discovered for this particular problem.

The choice of pack often rests with the purchaser, but it depends chiefly on the ultimate use of the flower. Retail florists who make up their own corsages prefer the cotton pack. The foil and lapel packs are preferred by the 5-and-10-cent stores and promotional users because the flower is in corsage form, ready to be pinned. (An order for 15,000 vandas is not unusual for promotional purposes.) Some shippers sell "taped" vandas; that is, a small wire about 5 in. long is taped to the vanda permitting it to be employed in a greater number of floral uses and at the same time reducing labor for mainland florists.

Flowers of Hawaii relies primarily on the foil pack, lapel pack and cotton pack. Blooms are graded and sprayed with water before packing. Two boxes are placed in a master corrugated box, providing air space as an insulant against temperature variations. The master box is marked with arrows, stamped "fragile" and imprinted with the desired temperature range.

Recently this firm introduced a revolutionary new package principally for the gift sale of vandas through retail outlets. The innovation is a single-flower carton with a picture-window cover. The box holds one blossom in either foil, lapel or cotton pack and is a handy protective container for the flower. The flowers are automatically cartoned by machine.

Robert Warne, shipping under the trade name of Nuuanu Orchids, is a prominent Honolulu grower and shipper of vandas. Mr. Warne began testing various types of packages in 1945 and now relies exclusively on a foil-lined, cellophane-wrapped package that is heat sealed. The 12 tightly packed flowers are visible through the top of the box. The cellophane pack excels in preserving the color and freshness of the vandas. The package is kept small because Mr. Warne specializes in selling vandas through wholesalers to retail florists and it minimizes damage if fading or "whiting out" occurs. On the back of the box is imprinted a number of suggested vanda floral arrangements for florists to use. The boxes are shipped in specially sized corrugated containers of varying capacities.

Other shippers also use impressive wax-treated cartons holding anywhere from a dozen to 200 blossoms, but none are cellophane wrapped. Most shippers merely overlay a sheet of wet cotton over the vandas after sprinkling them with water. One shipper reports obtaining best results by placing the stems of the vandas in water overnight. These vandas swell and seem to retain their freshness longer than do vandas shipped without this preconditioning.

In contrast are the packaging practices of a few competitors who use discarded beer-can cartons as standard containers. Such cartons hold about 800 loosely packed orchids. Some shippers line the cartons with ti leaves, a native foliage, to retard moisture absorption by the container. The shippers using this method of packaging are generally the ones having their headquarters or distribution centers on the mainland. Their interest is to pack and ship a large volume at a small cost. Regrading, repacking and repackaging for mainland distribution are done at their mainland offices. There is another justification for this type of pack. If fading and rotting occur, such spoilage usually takes place before the vandas reach the redistribution center where they can be eliminated in the regrading process. From the standpoint of

good will and future sales, it is much better to have the vandas spoil while in the possession of the shipper than to deliver such products to a consignee.

To guard the vandas against freezing, cleats are often nailed around the packages. The cleats provide a protective layer of air between the bottom of a carton and the metal surfaces of a loading cart or any other cold surface which may have been exposed to zero temperatures.

Many of the vanda joaquims and the vanda hybrids and species are being shipped out in spray form of several flowers each. The sprays are much more difficult to pack than are the single blossoms and require larger packages. No completely satisfactory method has yet been devised by Hawaiian shippers for shipping spray orchids in volume quantities. The flowers are more easily bruised when in spray form, particularly when packed closely together to avoid paying transportation charges by cubic measurement rather than by weight. Shredded wax paper is the common packing material used whenever cattleyas or the spray orchids, vandas, dendrobiums or phalaenopsis are shipped. Wood roses, however, can be packed in shredded newspaper and arrive at their destination in satisfactory condition. Many wood roses are shipped out in prepared arrangements tightly secured to the box and protected by shredded paper.

Other products

Just as vanda packaging ranges from cellophane-wrapped to beer-carton packs, there is a divergence in preparing other Hawaiian blooms and foliage for shipment. Anthuriums, for example, are generally shipped a dozen to a box, but the method of packing varies as does the size of the box. Some shippers merely lay the anthuriums in a wax-lined box—six flowers at each end—with soft cellulose sheets under and around each flower and shredded waxed paper filling the rest of the box.

Flowers of Hawaii has perhaps the fanciest anthurium shipping box, measuring 13 in. wide, 7 in. long, and completely gold in color. A cardboard insert in an inverted V-shape is perforated to hold the anthuriums—six on each side. The stems are passed through the insert, permitting the flowers to rest on top. Sheets of cotton protect the flowers wherever they may touch. Water-filled balloons are attached to the ends of the stems, which are securely fastened to prevent shifting of the flowers in transit. This is considered a gift package, but it is also shipped to florists throughout the United States. Flowers of Hawaii packs bird-of-paradise and red and shell ginger in a similar manner. One problem is to protect the stem where it passes through the cardboard. Rubbing in transit will oftentimes cause the stem of an anthurium to rot at the point of contact before the flower itself shows sign of fatigue.

Anthuriums are frequently shipped in a box with foliage or the heavy cut flowers to avoid paying the cubic transportation rates that apply if they are shipped alone. In that case, several dozen may be attached to a cardboard panel which is laid over the foliage. Anthuriums may be packed in a separate container and placed among the foliage and heavy cut flowers.

Hawaiian foliage is exported in large quantities, primarily by the wholesale shipper, to mainland florists. Foliage is used principally for decorative purposes or to complement flowers, and is seldom sold separately to flower buyers. The per-leaf price is low—one or two cents (except for the big monstera leaf)—so most shippers spend very little time or money on packing and packaging foliage. The foliage is generally laid loosely on the bottom of the box, with ti leaves at the bottom, and crotons and the lighter foliage on top. The tis are placed with tips to the center of the box to protect this most important portion of the leaf during shipment. Often the polypodiums, lycopodiums, dieffenbachias and others are wrapped in moist newspapers and packed in the shipping container. The large monstera leaves are frequently rolled in wet newspapers for protection and preservation and to conserve space.

Some shippers bind the leaves into bunches ranging in size from a half dozen to 50 leaves each; no standard foliage pack or unit of sale prevails within the industry. The shipping containers are much larger than those used for vandas and similar flowers. Another reason for large packages is to enable the shippers to take advantage of the lower air-freight rates for shipments of 35 lbs. or more.

Flowers of Hawaii has probably done more than any other shipper in the Territory in presenting a fancy foliage pack to the trade. Marketing

FOLIAGE PACKS are simple die-cut cartons affording advantageous display of the leaves. Brand name appears on the front panel; several floral arrangements are illustrated on back. PHOTO COURTESY FLOWERS OF HAWAII, LTD.

PHOTO COURTESY UNITED AIR LINES.

AIR SHIPMENT boomed export of Hawaiian flora into big business in postwar years. Heated air circulated through cargo pits and fibre glass insulating blankets protect against low temperature at high altitudes.

their products under the "Royal Foliage" brand, they pack the foliage separately or in various combinations in appealing containers. These packs are sold chiefly to retail florists.

Some of the foliage, particularly the ti leaves, can be shipped by ocean vessel. The same containers are generally used as when shipping by air freight, although it is not unusual to see foliage shipped by boat in burlap sacks.

The shippers handling foliage are also the ones specializing in selling the bulky ginger, heliconia and bird-of-paradise flowers. These flowers are usually tied six to a bunch and the flowering portions are wrapped in cellophane. The bunch is then wrapped in wet newspapers and tied. Some shippers place water-filled balloons at the end of the long stems, while others merely precondition the flowers in water before shipping. When shipping these bulky cut flowers with foliage, they are usually packed on top of the foliage. Shredded newspapers are packed around the flowers and sheets of moist newspapers are laid over the top of the contents for the cushioning effect. The flowers and foliage are then secured by means of two or three wooden cleats placed across the width of the box and nailed to the container.

The distinctive Hawaiian vanda and carnation leis are difficult to pack for export because when laid horizontally they "ride" on the petal edges, which are easily bruised. Plenty of moist sheets of cotton and shredded wax paper are the principal protective devices now being used. A container may eventually be developed for volume shipments in which the individual leis can be hung from the top to protect the delicate petals and secured at the bottom to prevent shifting in transit.

In the meantime, Flowers of Hawaii has reverted to a Hawaiian idea for its newest gift creation in packaging and selling Hawaiian leis. The "puolo" (Hawaiian for "bundle") is made of green ti leaves. The stems of the eight or 10 leaves used are bound and held upward. The tips are then folded outward and upward to resemble an angel-food-cake baking pan. The lei encircles the cone formed by the stems and nestles in the concavity of the folded leaves. The tips of the leaves are then tied to the stems by another ti leaf formed into a bow. The puolo is distinctive and attractive, easily carried and provides both cushioning and moisture protection for the lei while in transit.

This packaging development may well herald a shift to Hawaiian packaging motifs for the flowers and foliage originating from the colorful and romantic Hawaiian Islands.

Inspection mandatory

All horticultural material, including floral, leaving the islands for the mainland must pass a rigid plant inspection as required by Federal law. The carriers do not accept floral packages until they are inspected, passed and sealed. Some flowers, such as the gardenia, are forbidden to be exported and all plants shipped must be free of soil material. Other products can only be shipped after being fumigated. Vanda orchids were subjected to fumigation for almost a year in 1949-1950. The 2½-hr. methyl bromide treatment at not less than 70 deg. F. shortened the life expectancy of the vandas perceptibly.

Most flower shippers consider plant inspection a necessary nuisance, but it has economic implications as well. The flowers cannot be packed and wrapped until after inspection, which may take place at the post office, the inspector's office, the airport or in the packing sheds of the larger shippers. The extra handling is time consuming, costly and oftentimes results in bruising a delicate flower. The bruise is unseen and unknown until the flower reaches the recipient.

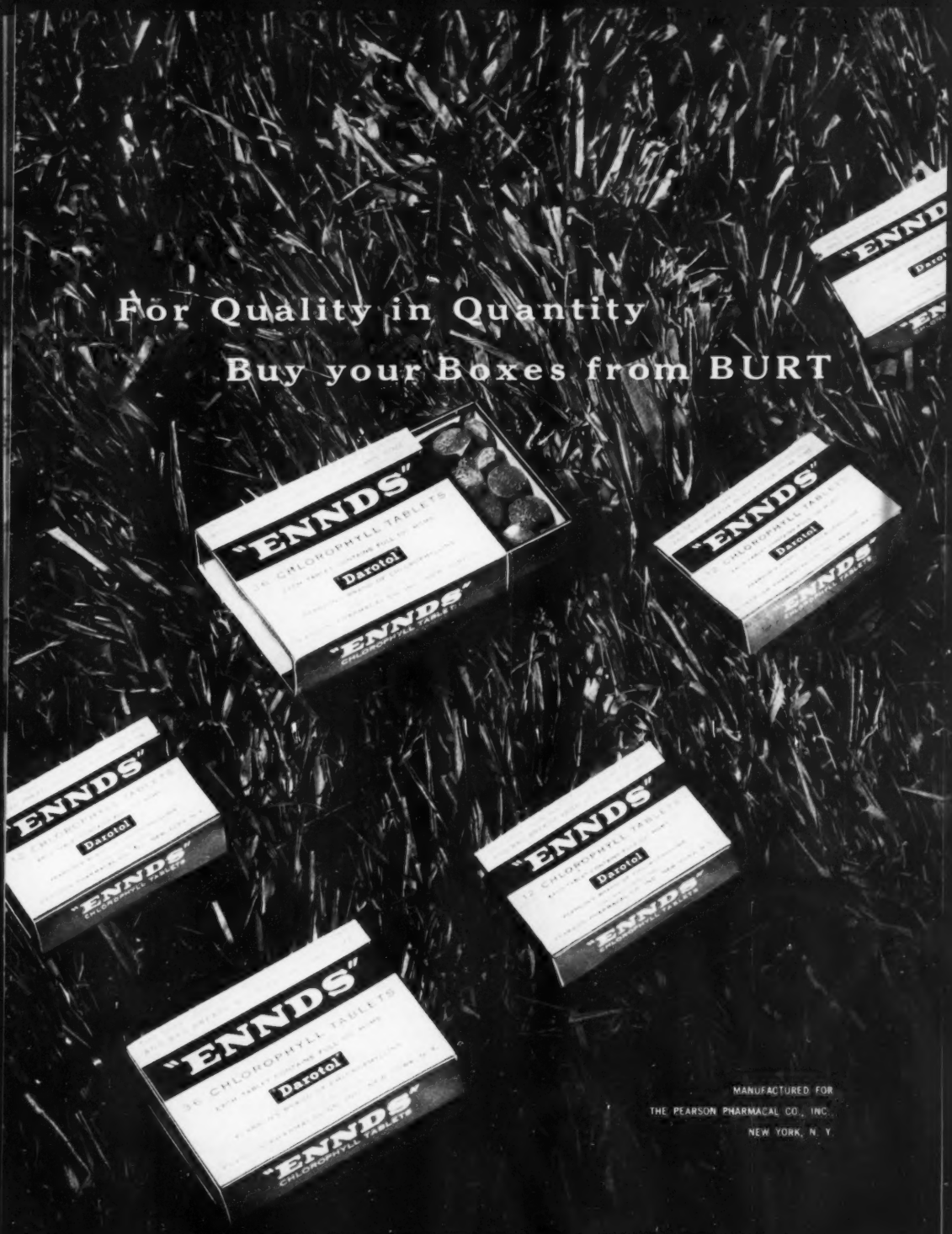
Shipping containers

Early in the game most shippers started out using plain cardboard boxes. They soon learned that such a box absorbs moisture and dehydrates the flower and the box disintegrates with ordinary handling. Now most boxes used are those with treated interiors or lined with wax paper to prevent water absorption. Originally, in view of the costs of transportation, weight saving was considered as essential as appearance on arrival. Postal officials took the lead in selling the merits of stronger packages, so today a box with a 200-lb. bursting-test specification is considered as the minimum-strength flower shipping box.

The air-freight carriers have also educated the volume shippers to use stronger corrugated boxes, preferably those designed for the floral trade. Numerous complaints from mainland receivers and the loss of accounts were supporting evidence that packaging had to be improved. Today, local florists consider strength of the box as one of the most important features in any new package design.

Much improvement is needed in the handling of floral packages by the carriers, their employees and agents. Handling practices have improved tremendously since flowers commenced moving by air in volume, but many a package is still tossed rather than lifted into place. The Post Office

(*This article continued on page 193*)



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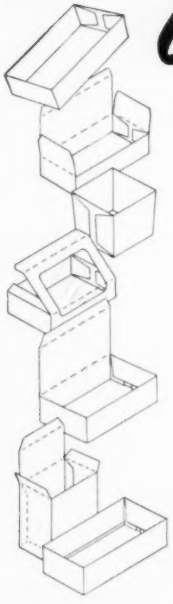

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Gas permeability of films*

A NEW METHOD OF PERMITTING THE SIMULTANEOUS MEASUREMENT OF O_2 AND CO_2 TRANSMISSION.

By Arthur H. Landrock† and Bernard E. Proctor**

Packaging technologists have considerable interest currently in data regarding the gas permeabilities of many of the new films and laminations. These data are of vital importance in predicting the shelf life of all types of packaged foods and food products. As packaged fresh produce must be able to carry out aerobic respiration, films of high gas permeability are necessary. On the other hand, oxygen-sensitive dried foods such as powdered whole milk should be packaged in materials of low gas permeability.

In the past decade several methods for measuring gas permeability have been in common use. The literature on this subject was reviewed in 1948 by West, Kunz and Sears (1)[1] in a paper in the bibliographic series of the Institute of Paper Chemistry and a year earlier by Paine (2) in England. Elder (3) has written an excellent discussion of the mechanism of gas permeability.

Most of the recent measurements have been made by the General Foods method as originally described by Shuman (4). This has been proposed as a standard test procedure by the Packaging Institute (5). According to this method, which employs a manometric apparatus, the test gas is pres-

* Contribution No. 129 from the Department of Food Technology, Massachusetts Institute of Technology, Cambridge, Mass. Presented at the Annual Meeting of the Technical Assn. of the Pulp & Paper Industry, New York, Feb. 20, 1952.

† Technical Assistant in Packaging.

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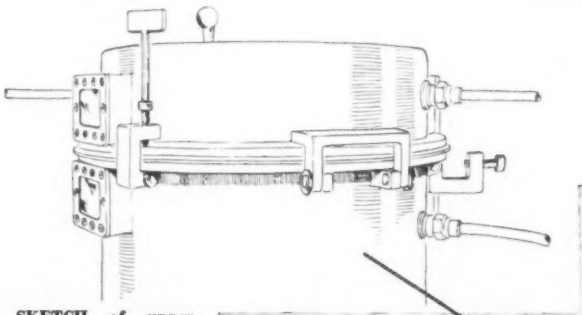
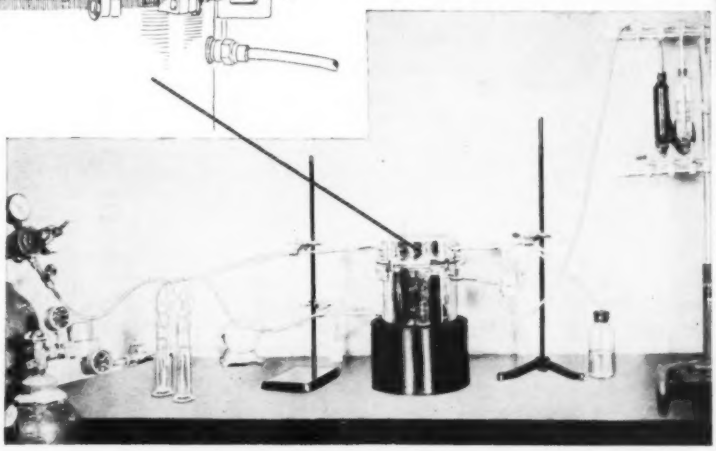
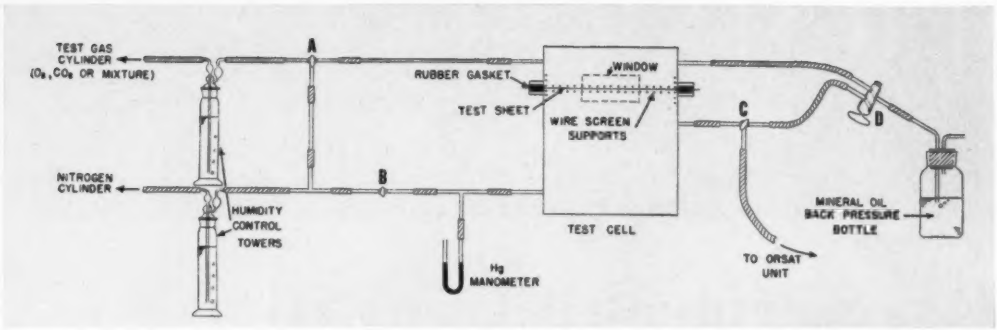
[1] Numbers in parentheses identify "References" appended.



1. SKETCH of upper part of permeability cell, showing hinge, windows, clamps, gaskets and gas inlet and outlet tubes.



2. PHOTOGRAPH of the apparatus as actually used for the simultaneous measurement of oxygen and carbon dioxide permeabilities of sheet materials.



3. DIAGRAMMATIC representation of simplified form of apparatus as finally recommended.

ent at one atmosphere on one side of the film; the space on the other side, being evacuated, is under very low pressure. The increase in pressure on the low-pressure side of the film as the test gas passes through the film is translated into terms of permeability units. Cartwright (6) described a modification of this manometric apparatus constructed entirely of glass and possessing increased sensitivity. Simril and Hershberger (7), in 1950, reported data obtained with an improved type of General Foods apparatus.

Another method that has received widespread publicity is the isostatic sweep gas method of Davis (8, 9). In this method, different gases, both at atmospheric pressure, are passed over opposite sides of a series of test sheets. The difference in partial pressure with respect to the test gas is one atmosphere and the test gas permeates the test sheets independently of the differences in total pressure. Any permeating test gas is picked up by the sweep gas and is determined by appropriate means after it has left the diffusion cell. The authors tried this method for studying the carbon dioxide permeability of packaging materials and found it satisfactory except that there was considerable difficulty in insuring against leakage and in finding a leak when it was known to exist. The apparatus is complex, especially when used to determine oxygen permeabilities where gravimetric absorption cannot be used.

In 1949, Zambito (10) of the Linde Air Products Co. reported the development of a method for determining oxygen permeability with the use of a sensitive tungsten filament for measuring low oxygen concentrations. This method, although undoubtedly giving useful results, is complex in use and relies upon a subjective measurement (the matching of a filament color) by the operator.

In 1944, Smith and Kleiber (11) described a method of measuring oxygen permeability based on changes in partial oxygen pressure. The film is mounted in sack form rather than as a flat sheet. Nitrogen is used on one side of the sheet and air on the other side. A gas-analysis method is employed to measure the oxygen that permeates the sheet. The apparatus was built specifically for use with air.

In this same year, Todd (12) described a method somewhat similar to the General Foods method, but utilizing a volumetric rather than a manometric principle for the measurement of permeability. A large chamber (evacuated) is used on one side of the test sheet and a small chamber held at atmospheric pressure on the other side. When the test gas passes through the sheet as a result of the partial pressure differential, a column of liquid in a horizontal tube moves in to replace the gas transmitted from the small chamber, thus providing a direct measurement of the permeability of the sheet to the test gas.

In 1946, Platenius (13) at Cornell University used a simple method for studying oxygen permeability. He drilled a hole in the bottom of a desiccator and through this hole provided two outlets with stopcocks. The test sheet was mounted somewhat crudely on the ground glass rim of the desiccator and held down with rubber bands and grease. The oxygen permeability across the film with nitrogen in the chamber and air outside was measured at the end of the test period by means of an Orsat gas-analysis apparatus. Only small amounts of oxygen were permitted to build up in the chamber. The method of Platenius suggested to the authors the method described in this paper.

Development of method

For a long time the authors have been interested in measurements of the gas permeabilities of packaging films, but have felt that no one method thus far developed possesses all or even most of the advantages that are desirable.

It is believed that the ideal method should meet the following requirements:

1. Be simple in principle and technique,
2. Make use of standard laboratory equipment, insofar as possible,
3. Utilize a large area of test sample,
4. Provide a securely sealed-off sample sheet (if a clamping arrangement is used, it should be readily mounted and dismounted, and should be tight),
5. Provide for continuous inspection of the surface of the sample sheet,
6. Provide for the possible use of any gas or mixture of gases on either side of the test sheet,
7. Utilize the principle of Dalton's law of partial pressures in measurement of permeabilities to such gases as carbon dioxide and oxygen, to permit their simultaneous penetration of the sample sheet,

8. Provide for easy control of relative humidity on either side of the test sheet,

9. Give accurate and reproducible results.

The method of Platenius, although capable of refinement, meets these requirements closely. However, any attempts on the part of the authors of this paper to sweep a gas or a mixture of gases through the desiccator cover, over the film and back out again through the desiccator cover met with failure because of the difficulty of securing an adequate seal, even with a heavy lubricating grease. It was realized that some kind of pressure clamping arrangement had to be used. This eliminated the possibility of using readily available glass apparatus for the permeability test cell.

A unit was finally designed that seemed to possess all the attributes of a good permeability cell. This unit, together with apparatus for control of humidity and pressure and for gas analysis, was used to measure the permeabilities of films to carbon dioxide and oxygen when these gases were allowed to permeate the film simultaneously. The principle of the method is based on Dalton's law of partial pressures, which states that in mixtures of gases each gas behaves independently of other gases present and that the total pressure is the sum of the partial pressures. Each gas will, therefore, permeate a sheet according to its partial pressure differential across the sheet. Smith and Kleiber (11) and Platenius (13) utilized this principle in their methods of measuring oxygen permeability.

The permeability cell was made from brass and later was chrome plated. The unit is cylindrical in shape and is divided into two chambers, the lower larger than the upper chamber. The upper chamber is attached to the lower by a unique hinge arrangement, which accommodates gaskets of varying thickness. Rubber gaskets 3/16-in. thick are cemented to the ¾-in. rims of both chambers with rubber cement. Three fixed screw-type clamps are placed on the rim periphery so that clamping can be carried out with uniform pressure all around the rim, once the test film has been placed in position between the two chambers.

Windows, although not absolutely necessary, were considered helpful and so have been placed on opposite sides of the cell, in both chambers. These are sealed with Dek-Adhese[2] to prevent leakage.

To prevent undue distortion of the film during a run, heavy wire screening (three-mesh) is placed in position above and below the test sheet.

The entire cell, as finally devised, is illustrated in Figs. 1, 2 and 3. This cell is the only complex part of the entire equipment, but is simple in operation.

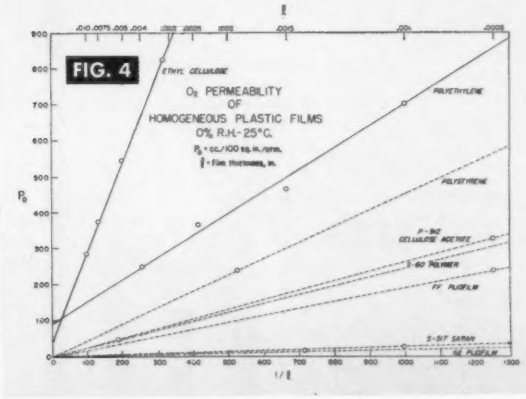
Glass humidity-control towers are provided to supply humidity control in the upper and lower chambers. A back-pressure bottle partially filled with mineral oil prevents air from coming back into the apparatus and permits the gas that is swept through the upper chamber of the cell to pass through at a pressure only slightly greater than atmospheric pressure. Water is not used in this back-pressure bottle because of its volatility. An open manometer is fitted to the chamber.

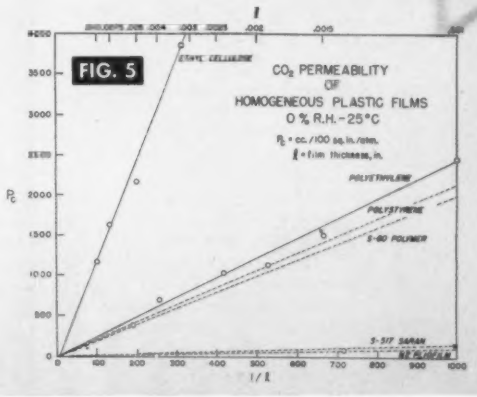
For analysis of the gaseous mixture accumulated in the lower chamber of the cell, an Orsat gas-analysis apparatus (laboratory model) was used. The burette of this apparatus is in three sections, the lowest 6 ml. of which is graduated into 0.05-ml. units and the intermediate section into 0.10-ml. units.[3] This arrangement provides extreme accuracy in making measurements. Part of the gas-analysis apparatus may be seen in Fig. 2. It was found that the Auto-bubbler type of absorption pipette was most suitable, even for carbon dioxide absorption with KOH. Needle valves are provided in the gas cylinders to insure a steady flow of gas at all times.

In food packaging, the permeabilities of packaging materials to oxygen and carbon dioxide are of vital importance. These two gases were therefore chosen for study and a mixture of the two was made in the ratio of approximately 80% oxygen to 20% carbon dioxide. A search of the literature indicated that carbon dioxide permeabilities are usually about four times as high as oxygen permeabili-

[2] This is a rapid-drying plastic cement, a product of the Gates Engineering Co., Wilmington, Del.

[3] The gas-measuring burette used was the Burrell Laboratory Type 3A, Premier Model. Other manufacturers' models should do equally well.





ties and this ratio should permit the transfer of approximately equal amounts of the two gases through the test sheet per unit of time. The 80:20 mixture was prepared specially by a local gas manufacturer. Occasional checks showed no change in composition as the gas supply in the tanks became depleted.

Operation of the apparatus

The operation of the apparatus is as follows: If the test conditions specify 0% R.H., concentrated sulfuric acid is placed in the humidity-control towers. The test sample is placed on the lower rubber gasket ring and clamped in place securely.

Nitrogen (see Fig. 3) is then passed through stopcock B into the lower chamber, stopcocks C and D being open all the way through to the back-pressure bottle. Stopcock A is closed off. The lower chamber is swept with nitrogen for about 2 hrs., after which it should contain only a trace of oxygen.

It is essential to know the exact composition of the test gas in the lower chamber. This can be determined easily. With stopcock C closed off, nitrogen is forced into the cell under pressure until about ½ in. of Hg pressure is built up. Stopcock B is then closed off so that the gas will remain in the cell. Slightly more than 100 ml. of sample is then drawn off into the gas burette, after the line has first been evacuated. This should leave close to one atmosphere of gas in the cell.

The test gas mixture is then passed across A, through the upper chamber, through D and into the back-pressure bottle. At first a high rate of flow is used, especially for films of high permeability. After 10 minutes or so of rapid sweeping, a rate of 60 bubbles per minute (at the humidity-control tower) will provide more than ample replacement of the depleted test gas mixture, unless the sheet is extremely porous. The initial time of sweeping is noted and recorded.

The next step is to analyze the sample of gas held in the burette. If air only was in the lower chamber just before sweeping with nitrogen, it is not necessary to analyze the sample for its carbon dioxide content. "Oxsorbent" is used in the absorption of oxygen.

The initial pressure at the lower manometer is noted. At the end of the test period, the length of which is determined by the properties of the film or sheet, the new pressure is noted and another sample is drawn from the lower chamber for gas analysis. No more than ½ in. of Hg pressure should be permitted to build up in the lower chamber, if possible.

It is suggested that, in general, sufficiently accurate end results will be obtained if each test gas is allowed to permeate the test sheet until its concentration in the lower chamber is increased about 1%. In the case of polyethylene of 0.0015-in. gauge, this would require a test period of about 8½ hrs. Shorter periods can be used where convenient, however.

It has been stated that approximately equal amounts of carbon dioxide and oxygen should permeate the film under typical conditions. Under these conditions the apparatus is equally sensitive to both gases.

Calculations

The equation used in calculating the carbon dioxide permeability is as follows:

$$\frac{(24)\ (100)\ (V)\ (C_f - C_i)}{(A)\ (h)\left[\dfrac{(C_t - C_i) + (C_t - C_f)}{2}\right]} =$$

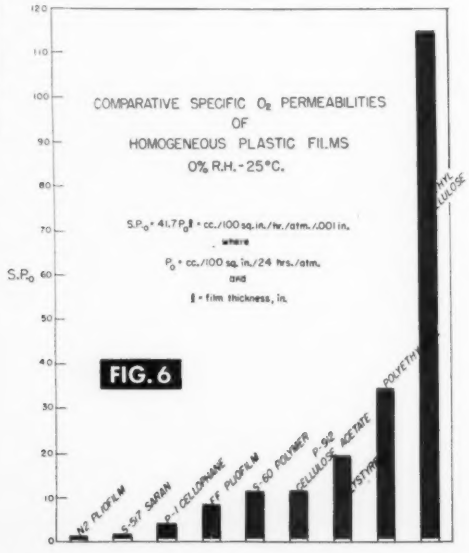
$$\frac{(4800)\ (V)\ (C_f - C_i)}{(A)\ (h)\ (2C_t - C_i - C_f)} =$$

$$\frac{(4800)\ (5855)\ (C_f - C_i)}{(50.26)\ (h)\ (2C_t - C_i - C_f)} =$$

$$\frac{(559{,}172)\ (C_f - C_i)}{(h)\ (2C_t - C_i - C_f)} = P_c$$

where

- V = total gas volume in lower chamber, cc.
- A = area of exposed test film, sq. in.
- h = test time, hrs.
- C_t = per cent CO_2 coming from tank
- C_i = per cent CO_2 initially in lower chamber



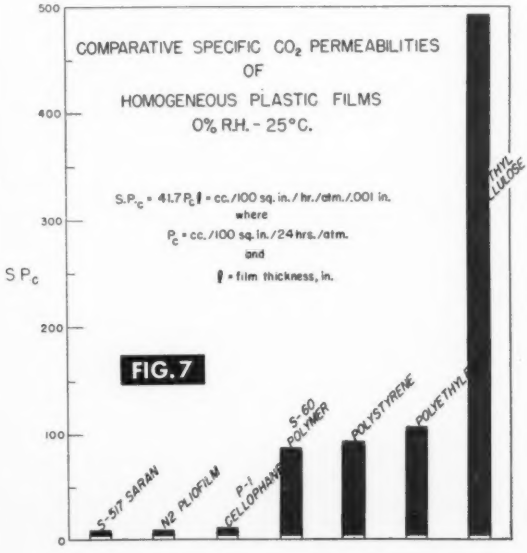


TABLE I—GAS PERMEABILITIES OF SHEET PACKAGING MATERIALS AS DETERMINED BY SIMULTANEOUS PERMEABILITY METHOD[a]

(Avg. temp., *ca.* 25° C.)

Sheet	*Gauge (in.)*	*R.H. (%)*	P_o[b]	*S.P.-o*[c]	P_c[b]	*S.P.-c*[c]	$P_c:P_o$[d]
Pliofilm N2	0.0014	0	*14*	0.81	*87*	5.1	6.2
Pliofilm FF	0.0008	0	240[e]	7.8[e]	...	...	...
Cellulose acetate (Lumarith P-912)	0.0008	0	330[e]	11	...	...	...
Saran S-517	0.0005	0	43[e]	0.90[e]	310[f]	6.4[f]	7.1
			55	1.2	220	4.7	4.1
Saran S-517	0.0010	0	25[e]	1.0[e]	...	...	...
Polyethylene	0.0010	0	940[e]	39[e]	...	...	...
			700	29	2450	100	3.5
Polyethylene	0.0015	0	470	29	1500	94	3.2
Polyethylene	0.0024	0	370	37	1000	100	2.8
Polyethylene	0.0039	0	250	40	690	110	2.8
Polystyrene	0.0019	0	240[e]	19[e]	970[f]	77[f]	4.1
			240	19	1100	90	4.8
Ethyl cellulose							
Mfr. A.	0.0032	0	820	110	3800	510	4.7
Mfr. A.	0.0032	100	680	91	2100	280	(3.0)
Mfr. A.	0.0050	0	*540*	110	2200	450	4.0
Mfr. A.	0.0075	0	*370*	120	1600	500	4.3
Mfr. A.	0.010	0	280	120	1200	480	4.1
Mfr. B.	0.011	0	150	69	830	380	5.6
S-60 polymer	0.0053	0	48	11	370	82	7.7
Aluminum foil	0.0018	0	0	0	0	0	...
Foil-kraft laminate							
Foil	0.0019	0	*80*	...	*39*	...	...
Kraft	0.0026						
P-1 cellophane	0.0011	0	*70*	3.2	*160*	7.3	2.3
450 gauge		100	*2300*	110	*11000*	520	(4.9)
MS-3 cellophane 300 gauge	0.0009	0	62	...	82	...	1.3
MSBO-cellophane 300 gauge wettable side down	0.0009	100	*210*	...	*880*	...	(4.3)
						Average =	4.3[d]

[a] Unless otherwise stated, test gas was mixture of *ca.* 80% O_2 and 20% CO_2.

[b] Expressed as cc./100 sq.in./24 hr./atm. Italicized values represent single determinations; all other values are averages of from two to 10 determinations.

[c] Expressed as cc./100 sq.in./hr./atm./0.001 in.

[d] Figures in parentheses were not used in calculating the average ratio of P_c to P_o (4.3) because of high relative humidity or pore-type permeation.

[e] Test gas was 100% O_2.

[f] Test gas was 100% CO_2.

TABLE II—REPRODUCIBILITY OF DATA FOR POLYSTYRENE (0.0019 IN.) AT 0% R.H. AND 25° ± 3° C.

(Sweep gas mixture)

CO_2 permeabilities[a]
1123
1200
1480
1800
968
986
1030
1104
1009
599

Mean ($\overline{X}$) = 1130

Standard deviation (σ) = 322

Coefficient of variation (V)

$$= \frac{\sigma \times 100}{\overline{X}} = 28.5\%$$

[a] Expressed as cc./100 sq.in./24 hrs./atm.

C_f = per cent CO_2 finally in lower chamber

P_c = permeability of test sheet to CO_2 expressed as cc./100 sq. in./24 hrs./atm.

For calculation of oxygen permeability, O is substituted for C in the above equation. The figures for V and A in the equation apply to the apparatus as built by the authors.

It will be seen that the equation is a straightforward algebraic expression reduced to simple terms. One fundamental assumption is made; namely that the average driving force across the sheet is equal to the arithmetic mean of the initial and final driving forces. This is not strictly true, but for slight build-ups of test gas in the lower chamber the assumption is a reasonable one.

When the relative humidity is above 0% on either side of the test sheet, it is necessary to correct for the volume occupied by water vapor. This is done by multiplying the numerator by $\frac{100\text{-}W_U}{100}$ and the denominator by $\frac{100\text{-}W_L}{100}$, where W_U equals the volume per cent of water vapor in the upper chamber and W_L the volume per cent of water vapor in the lower chamber. At 25 deg. C. the pressure of water vapor at saturation is 23.76 mm. Hg. and the volume per cent, or W, is then $\frac{23.76 \times \%\ \text{R.H.}}{760}$ or 3.13% at 100% R.H. Obviously the correction factors for water vapor cancel out when the relative humidity is the same in both chambers.

If it is desired to correct to standard conditions of temperature and pressure (0 deg. C. and 1 atm.), the permeability value must be multiplied by $\frac{273}{(273 + t)}$. At 25 deg. C. this correction would reduce the permeability value by about 9%. In the results reported in this paper, no correction of the values to standard temperature and pressure has been made, however, partly because of the lack of constancy of temperature when the observations were made (22-28 deg. C.) and partly because correcting to 0 deg. C. is somewhat misleading in gas permeability studies. The casual user of gas permeability data is apt to draw the conclusion that the measurements were made at 0 deg C. if the results are corrected to this temperature. This is especially serious because at 0 deg. C. the permeability rate would be only about three-sixteenths of the rate of permeability at 25 deg. C.

The specific permeability of a test sheet to oxygen is calculated according to the following formula:

$S.P._o = 41.7 \times P_o \times t = cc.O_2/100$ sq. in./hr./atm./0.001 in. where P_o = $cc.O_2/100$ sq. in./24 hrs./atm. and t = film thickness in inches.

The unit of measurement of specific permeability is a new one.

Cartwright (6) has suggested expressing the specific permeability on the basis of a film of 0.001-in. thickness.

(This article continued on page 199)

Outlook for tin conservation

DIRECTIONS OF APPROACH AND THE TECHNICAL LIMITATIONS ON FURTHER REDUCTIONS IN COATINGS ARE DISCUSSED.

By R. R. Hartwell*

In view of the complications arising from tin pricing and its strategic importance, there is a possibility that containers face further limitations on the use of tin. Because of this situation it seems desirable that the packaging field have an appreciation of the technical principles behind tin conservation, particularly as they refer to the possibilities of making further reductions in tin consumption without serious effect on container shelf life or limiting the number of containers available.

So far as is known, from the technical viewpoint NPA Order M-25 has in general worked out in a satisfactory manner.

There have been instances where revisions have had to be made due to misunderstandings in product requirements or difficulty in converting equipment, but considering the size of the task, these have been in the minority and little further adjustment appears necessary for these reasons. Although some 30% of all tinplate made in 1950 was #25 electrolytic plate[1] and it had been extensively used for such products as animal food and shortening over a period of several years, the widespread use of this grade for processed foods was the provision of M-25 drawing most comment and for that reason worthy of special mention here. Because it is well known that rust resistance is related to tin coating weight, this measure caused some concern. It is better appreciated now that the basis for the use of #25 electrolytic plate lay in the knowledge that tin coating weight alone never determines whether rust will form or be absent under a given set of conditions and that the only positive rust-prevention methods were the use of outside enamels or the elimination of the more extreme conditions of packing or storage. It is too early for a full assessment of the effects of the use of #25 plate, but it may be said that so far the results are as encouraging as expected. This is not to say that rusting has been entirely absent, because some has always occurred with #50 and hot-dipped plate where conditions were not satisfactory. It is rather that so far rusting appears to be no more prevalent on the #25 than on the #50 plate it replaces. This is not only true on bodies which were not outside enameled, but also on the limited number of outside plain ends used last year.

Before commenting on future possibilities for tin conservation, it is instructive to consider the current distribution of tin among the categories shown in M-25. An estimate of the situation during the intended one-year life of the Aug. 23, 1951, amendment of M-25 appears below. It will be appreciated that there are limits to the accuracy of such estimates as those contained in Table I because, among other reasons, it is necessary to make assumptions regarding the probable volume of the various packs. It is also necessary to attempt to take into account such situations as exist for evaporated milk, where an appreciable amount of #75 electrolytic plate is used where M-25 permits hot-dipped.

In view of the relative amounts of tin used, particularly as related to steel consumption, it seems clear that any hope for substantial savings must center about the fruit, vegetable and dairy groupings, because these use three-quarters of all tin consumed. For this reason, comments on future possibilities will be restricted to these fields.

The most important technical point limiting tin conservation is the "corrosion shelf life" of the container—that is, the length of time the container will withstand the corrosive action of its contents before becoming a hydrogen swell or perforation. It is well known that the *degree* of corrosiveness exhibited by different foods varies widely, as does the *type* of corrosive attack. Basic knowledge of these factors was applied in WPB Order M-81 as well as in its successor, NPA Order

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[1] To avoid confusion with hot-dipped plate, it is customary to refer to electrolytic tinplate carrying tin coatings of 0.25, 0.50, 0.75#BB, etc., as #25, #50, #75, etc.

FIG. 1 — SHELF LIFE VARIATION IN INDIVIDUAL LOTS OF ELECTROLYTIC PLATE OF INDICATED COATING WEIGHT

(1943 PACK—GRAPEFRUIT JUICE IN #2 PLAIN CANS)

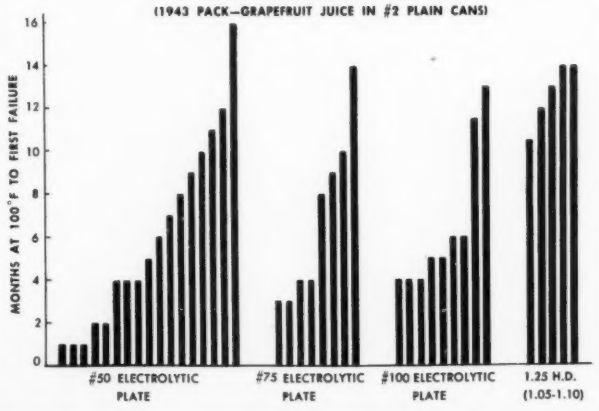


TABLE I—TIN AND STEEL CONSUMPTION AS RELATED TO COMMODITY CLASSIFICATION

M-25 category	*% tin consumed*		*% steel consumed*		*Average tin coating (#/BB)*	
Fruit	32.6		17.0		1.06	
Vegetables	29.7		22.0		0.75	
Tomato products only		8.8		5.7		0.85
Fish	4.8		5.9		0.45	
Dairy	14.5		8.5		0.95	
Evaporated milk only		11.6		6.8		0.95
Poultry	0.2		0.4		0.26	
Meat	5.1		4.0		0.72	
Miscellaneous food products	10.3		26.3		0.21	
Beer only		4.6		10.2		0.25
Animal food only		1.0		2.3		0.25
Non-food	2.8		15.8		0.10	
Totals	100.0		100.0		0.55	

M-25, and of course explains why #25 electrolytic plate is indicated as being entirely adequate for many purposes and the heavy coatings of hot-dipped plate necessary for others. Since these limitation orders have received the benefits of the research and experience of some 10 years, the obvious has long since been put to use and further tin conservation depends on (a) a new material with lower tin content, but with the performance of hot dipped, (b) extension of principles which are already established, but not fully applied for reasons other than corrosion performance and (c) new types of container construction.

New materials

At present it appears that considerably more than half the tin consumed under the M-25 provisions will be in the form of hot-dipped plate. In view of this, it will be apparent that by far the single most effective way to reduce tin consumption would be to devise some substitute for this material. Hot-dipped uses include some plate for fully enameled cans in the fruit and vegetable categories, but the largest part of it is used for plain cans. In the main, these represent applications where fully enameled containers cannot be used because of effects on the quality of the product and this is one reason it is not possible to take advantage of enameled electrolytic plate to replace hot-dipped as is done for many other foods. If the substitute must be plain and considerable tin is required, heavily coated electrolytic plate is the obvious solution because this process permits coating the strip with different weights of tin on the two sides, a procedure which has never been accomplished on a practical scale with hot-dipped plate.

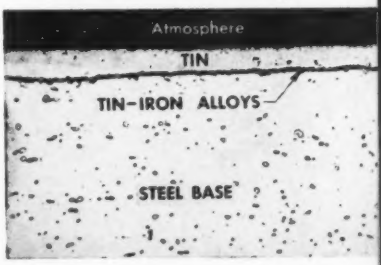
Such a "differentially" coated plate, for example with tin plated at the rate of 1#/BB on one side and 0.25#/BB on the other, would save about 45% of the tin now going into 1.25 hot-dipped plate for fruits and vegetables[2] if it were technically satisfactory for these purposes. Substantial semi-commercial quantities of differentially coated plate have been made and in principle the process appears a perfectly feasible one, although more difficult for some producing plants than others. It is also possible that full-scale use of such material would require the construction of additional tinning facilities, because the speed of the process is limited by the rate at which the heavy coating can be deposited. There are few electrolytic lines in existence which can make heavy coatings at economical speeds.

It has been demonstrated for several years that #50 is adequate for the outside of the can under most conditions and we appear to be well on the way to establishing similar data for #25. In view of the potential tin savings and the fact that #100 coatings have been possible ever since electrolytic plate became available, it may seem strange that such tinplate has not attained a widespread use.

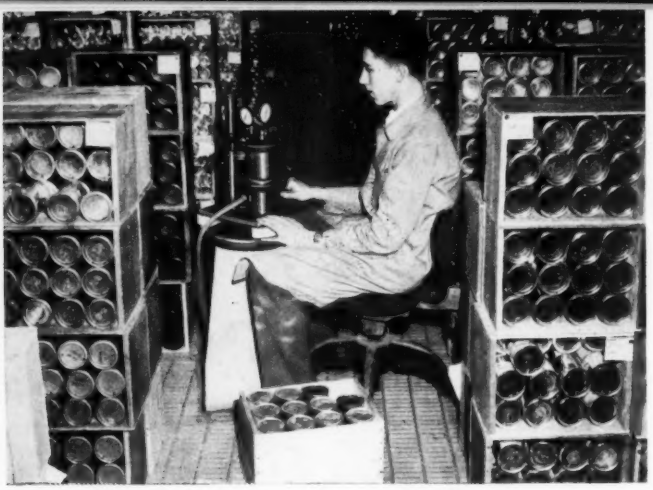
The reason for this apparent lack of enthusiasm for a new material arises from the erratic corrosion shelf-life behavior that has been manifest so far. For such a material to be widely useful, it is necessary to be able to depend on relatively consistent results and from Fig. 1 it will be apparent that such a situation certainly did not prevail in 1943. The data in Fig. 1 represent materials made by all existing plating processes and nearly all mills producing were included. While grapefruit juice was used in this particular experiment, the type of data was not unique to the product and similar results could be obtained in plain cans with any product on the fruit list. Considering this and the fact that the real standard for substitution in tin conservation is either to obtain the same

[2] On the basis of these figures, it would appear 50% was the correct figure. However, hot-dipped plate is classified on the basis of tin "yield" figures, whereas electrolytic terminology refers to coating on the sheet. With both on the same basis, 45% is thought to be a more reasonable estimate.

MEASURING the corrosion resistance of a metal strip on "pickle lag" apparatus at the American Can Co.'s Central Research Laboratory located at Maywood, Ill.



PHOTOMICROGRAPH of a cross-section of hot-dipped tinplate (magnified 2,000 times) shows tin coating, tin-iron alloys and steel base. Tin coating here is approximately 0.0001 in., whereas #50 electrolytic-plate coating is only about 0.00003 in.



FLIP-VACUUM TEST is an important means of evaluating the influence of steel and tin-coating specifications on the service life of canned foods. It measures the vacuum loss without destroying the container.

shelf life as given by the container previously used or at least one long enough to leave no doubt of a successful commercial experience, no further comment appears necessary to demonstrate why few people felt they could afford to be interested in such material unless it became possible to make some sort of selection. To a considerable extent, the same situation exists today.

To those interested in container corrosion problems, the striking point about such data as those in Fig. 1 was the indication of the future potentialities in electrolytic plate, for some electrolytic plate of each coating weight gave at least as long a corrosion shelf life as the 1.25 hot-dipped plate of the period. Because it probably is not widely known in the canning industry, it should be said that since 1943 a great amount of work has been done by both the steel and container industries in finding and correcting the causes of these variations, as well as testing hundreds of lots of plate thought to represent possible means of solving the problem. Commercially, we appear to be part way between the situation as it existed in 1943 and the point of obtaining results sufficiently consistent to permit the desired extensive use of heavily coated electrolytic plate. The details of this problem have no place here, but it may be said that the cause of the erratic corrosion behavior is fairly well established and the nature of the steel surface, both as it occurs in the steel as ready for plating and as it is influenced by the operations on the plating line, is considered to be responsible. Much can be done to minimize the former by changes in steel processing methods and for this purpose many of the producers have spent large sums for equipment. The exact nature of the other factor is less well understood, but one plating process is known to have an inherent advantage in this respect. Successful handling of both factors will be necessary if the electrolytic product is to be used to full advantage as a substitute for hot-dipped plate and it seems ironic that some tinplate producers have the means to control the first factor and others the second, but none as yet has both on a commercial basis.

Small-scale lots of material considered to represent a successful solution to the above problems have been made and Table II contains a summary of the corrosion results obtained from 100 deg. F. storage of one of these with results from the same steel, hot-dipped, included for comparison. The same factors which improve steel for electrolytic plate are to some extent also helpful for the older material, so other hot-dipped lots not receiving such benefits are included because they represent the real standard for comparison.

The preceding comments have been directed primarily to variations in the quality of heavily coated electrolytic plates. As a practical matter, it will be recognized that in considering substitution of electrolytic plate for plain hot-dipped, the corrosiveness of the product is also an important factor. In other words, if some degree of selection can be exercised in the tinplate and it is used for a product mildly enough corrosive so that even with the expected variations the corrosion shelf life is longer than the period required for merchandising and consumption, substitutions become possible on a limited scale. This accounts for the appearance of #75 in M-25 for part of the evaporated-milk can, its substantial commercial use in other parts of the same container where hot-dipped is permitted, as well as commercial trials of #100 during the past two years for several products, notably tomato juice. Increased use of heavy electrolytic coatings have for some time awaited only further improvement in the consistency of its corrosion performance. In view of this, no purpose would be served by its inclusion in M-25 for widespread use because such a step would not be on a sound basis until material with the characteristics described above is available in sufficient volume.

It would be unfortunate to leave

TABLE II—PERFORMANCE OF SATISFACTORY #100 ELECTROLYTIC PLATE

(Months at 100°F. to produce first corrosion failures)

	Special steel			*Other steels*	
	#100	*1.50*	*1.25*	*1.50*	*1.25*
Plain cans					
Dried prunes in water	7 Mo.	8 Mo.	7 Mo.	7 Mo.	7 Mo.
Peaches	19	19	..	17, 21**	..
Grapefruit juice	(9.2)*	19	..	13, 17	16
Tomato juice	(2.3)	..	(1.1)	..	(2.8) (7.3) (11.1)
Enameled cans					
R.S.P. cherries					
Non-striped	11	12	..	9, 7	9
S.S. striped cans	14	..	..	..	

* Figures in parentheses are vacuum loss, shown because corrosion failures have not occurred at time of last examination which was 22 months for grapefruit juice and 26 months for tomato juice.

** Has coating about 15% higher than average for 1.50 plate.

the impression that effective commercial solution of the problems described above would automatically permit entire replacement of hot-dipped by electrolytic, for there are indications of other problems being involved. There are many, for example, who believe certain products known to show unusual reactivity with tin will be among the last to employ electrolytic plate because of some evidence that it may tend to vary more than hot-dipped in this respect. Similarly, it is understood that to a large segment of the evaporated-milk industry the non-uniform type of attack on the tin coating often found on electrolytic plate is of more concern than the usual criterion of container corrosion, but it seems likely the latter problem will not be so difficult of solution as those mentioned above. In spite of these and similar considerations, it is thought that the majority of the hot-dipped plate on the fruit list and a substantial portion of that on the vegetable list could be replaced by electrolytic plate if the proper grade were now consistently available.

Extension of established principles

Compared to the potential savings available through a satisfactory heavily coated electrolytic plate to replace hot-dipped, there is relatively little to be gained by any other single change. However, there still remain places where extension of previously known principles could produce some additional savings and one of these concerns the so-called "combination can"; that is, the container with plain hot-dipped body and enameled electrolytic end. Apparently because the plain body is capable of furnishing some type of protection to the enameled electrolytic end, such containers quite typically perform equally as well as, if not better than, the plain completely hot-dipped containers they replace and it may be expected this type of container will be further exploited.

Additional tin conservation from this type of container may be expected along two directions, one of which is simply the extended use of the combination can. There are currently a few places, especially for citrus and pineapple products, where the plain, completely hot-dipped can is employed not because the combination can lacks corrosion-resisting properties, but because the problem is one of developing suitable enamel systems for the ends. This subject has been under study for some time and if successfully concluded, there is no technical reason to prevent this increased commercial use of the combination can.

TABLE III—EFFECT OF END TIN-COATING WEIGHT ON PERFORMANCE OF COMBINATION CAN

(Peaches)

	Body	*End*	*Months to first failure at 100° F.*	*Vacuum loss at 70° F.*
1942	1.25 Pl	1.25 Pl	12 Months	3.4″ after 70 months
	1.25 Pl	1.25 Pl	12	6.1
	1.25 Pl	#50 En	11	1.8
	1.50 Pl	#10	13	1.3
	1.50 Pl	CTS En	12	2.2
1943	1.25 Pl	1.25 Pl	10 Months	1.3″ after 57 months
	1.25 Pl	#75 En	10	1.2
	1.25 Pl	#50 En	10	0.6
	1.25 Pl	#10 En	11	0.7
1944	1.50 Pl	1.50 Pl	18 Months	0.2″ after 46 months
	1.50 Pl	#50 En	18	0.0
	1.50 Pl	#50 En	16	0.0
	1.50 Pl	#25 En	18	0.2
	1.50 Pl	#10 En	17	0.4

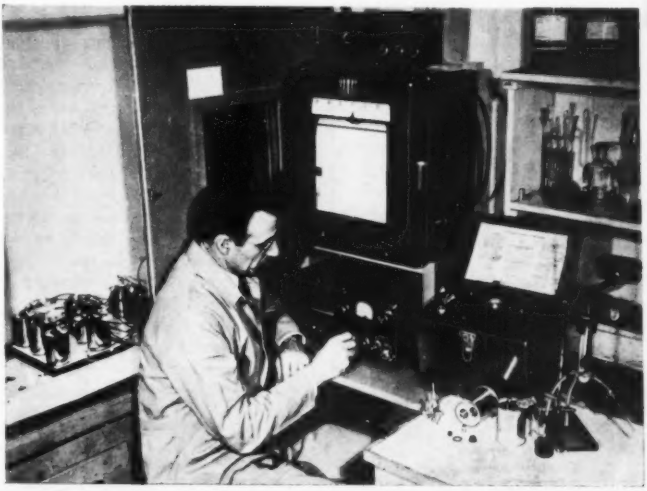
There is a second aspect to future tin savings by the use of enameled electrolytic ends. From a number of experiments, for which the data in Table III may be regarded as typical, it will be noted that the tin coating weight on the enameled ends of combination cans may be varied over a wide range with little effect on corrosion shelf life.

Such information as the above is the basis for the use of #25 for the ends of combination vegetable cans. Fruit-can ends have remained at #50 because it was thought well to gain experience on the extensive use of #25 for vegetables first, but on the basis of corrosion shelf life alone it seems that this is one of the places where some adjustment is likely in the future.

Still further possibilities exist in the use of CTS (chemically treated steel) plate or some other tin-free material with comparable performance. During the previous emergency, ends of such materials were used satisfactorily for certain vegetable and other types of products, so no further demonstration of their value as tin-conservation measures for these purposes seems required. However, their use for ends of more acid products, such as fruit, which is suggested by the above data, has never taken place on a commercial basis and constitutes a possible further means of tin conservation. In

(This article continued on page 182)

RECORDING POTENTIOMETER measures corrosion rates of 8 cans at once.



Questions & Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Shipping frozen foods by mail

QUESTION: We would like to sell frozen seafoods by mail. Our big problem is to find a container which will keep the food frozen while in transit. The frozen foods would not have to be kept preserved or frozen indefinitely, but a period of 48 hrs. should be a minimum. Any suggestions you may be able to give us to help solve our problem will be very much appreciated.

ANSWER: There is no container on the market today which would keep small quantities of frozen foods from thawing during mail shipments of 48 hrs. or more. Double-wall corrugated boxes, insulated pads of various kinds and aluminum foil are all good heat insulators, but they would not be sufficiently effective for your purposes, nor could quantities be used to give anywhere near the amount of insulation you would need to meet your minimum requirements. Commercial shipments are sometimes made using a double-wall corrugated box into which the original case of frozen foods is placed, then from 5 to 10 lbs. of dry ice is added. Such an arrangement will prevent thawing of the inner case for a day or two even in the summer months.

Small insulated bags for a package or two are used only for carrying goods from the store to the home and would not be effective for mail shipments.

Plastics formulations

QUESTION: I am confused by the application of the word "saran" to many different types of materials used in the packaging field. Apparently there must be more than one kind of saran and I am wondering if this is not true of other plastics and resins. Would you be good enough to advise me on the composition of some of the various materials?

ANSWER: Saran is the generic name for a series of synthetic resins based upon vinylidene chloride. You can refer to any plastics handbook for the details about the manufacture and composition of vinylidene chloride resins. Originally saran was the trade name used by Dow Chemical Co., but the name has since gone into the public domain and is now generally accepted as the name for many different formulations of resins which owe their properties to or which are predominantly composed of vinylidene chloride. Vinylidene chloride resins can be mixed with many other synthetics as well as with plasticizers and there are also a considerable number of vinylidene chloride resins based upon their method of manufacture, molecular weight, etc.

While the foregoing statements are directed toward saran, the same situation applies to many other resins used in both the plastics and packaging fields. For example, there are many different types of vinyl resins which can differ from one another greatly in their chemical and physical properties. Because of this situation it is necessary to be sure in ordering a material that you specify a certain grade or kind of resin and also that you know the facts concerning its formulation.

Moistureproof packaging

QUESTION: We are currently using a wet tight-wrap carton for one of our granular chemical products. We are giving consideration to moistureproofing this packaging. We would like to use a wax or moistureproof lacquered wrapper, but our sales department is reluctant to abandon the completely adhered or tight-wrap construction. Can you suggest a moistureproof wrapper which will operate on our tight-wrap machine?

ANSWER: A tight wrap is completely covered on the reverse side with an adhesive before it is applied to the carton. Since the adhesive used has a water base, it is not possible to put a moistureproof barrier on the printed side of such a wrapper, add moisture to the back of the wrapper and then apply it to a filled carton without having the moisture go into the product.

If you are interested in moistureproofing such a package construction, the simplest and most practical method is to use one of the many laminated carton constructions which are on the market. The carton can be constructed of board laminated to aluminum foil or to a greaseproof paper with a waxy laminate, or of two thin boards combined with an asphaltic laminate.

These can give you a wide range of laminated carton constructions and, more important, the moisture barrier would be evaporated through the wrapper rather than be absorbed into the product.

PI TESTS ADVANCE

Two Packaging Institute test methods, Test of Water-Vapor Transmission in Screw Cap Closures and Screw-Cap Liner Test for Determining Compatibility of Liner with a Specific Product, have been advanced from the "proposed" to the "tentative" status and given the designations, respectively, of PI Closures 1t-51 and PI Closures 2t-51. The methods in their proposed versions were published in MODERN PACKAGING in August, 1951, and only minor changes have been made. Both procedures were amended to specify the use of five containers for the testing, as well as five control bottles for caps in each condition, and the recommended relative humidity was changed from 75 to 95% in both cases. Copies of the revised methods are available from the Packaging Institute, 342 Madison Ave., New York 17.

Styled to SELL ITSELF with Cel-O-Seal

REG U S PAT OFF.

Eye-catching sparkle at point of sale

Bright Du Pont "Cel-O-Seal" bands help your product *sell itself* because they add the extra sales appeal . . . the kind that attracts shoppers . . . right at the point of sale . . . where 66% of all food purchases are decided.

Says: "protected quality" at point of use

At the point of use . . . where *repeat purchases* are decided . . . "Cel-O-Seal" bands remind the buyer that you've taken every precaution to seal in quality and purity. And, in many cases, "Cel-O-Seal" bands are printed with brand name and slogan, affording further opportunity to remind when it counts.

Find out what "Cel-O-Seal" can do for *your* product and *your* sales. Just mail a labeled dummy of your package. We'll band it, make recommendations, return it for your decision. No obligation, of course. Address: "Cel-O-Seal" Section, E. I. du Pont de Nemours & Co. (Inc.), 9529-A Nemours Bldg., Wilmington 98, Delaware. "Cel-O-Seal" cellulose bands are also sold by Armstrong Cork Co., Lancaster, Pa., and I. F. Schnier Co., San Francisco, Calif.

DU PONT

REG. U. S. PAT. OFF.

DU PONT "CEL-O-SEAL" BANDS

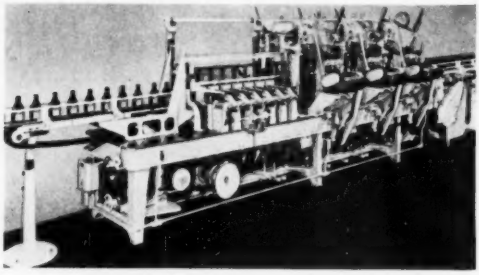
150th Anniversary

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Equipment and materials

TWO NEW BOTTLE LABELERS
have been introduced by the Economic Machinery Co., Worcester, Mass., a division of the Geo. J. Meyer Mfg. Co. of Milwaukee, makers of World Labelers.

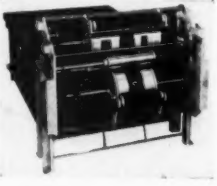
Three-at-a-time precision label application is the feature of the new Model 150 World "Bee-Line" labeler, illustrated



above. It is equipped with three labeling stations for handling three containers simultaneously at the most efficient speed. It delivers 150 labeled containers per minute, applying body labels, front and back labels, neck or shoulder labels and/or medallions simultaneously and precisely to round, square, oval, flat or paneled containers. All-electric control is said to assure smooth, gentle handling of containers and easy, convenient push-button operation.

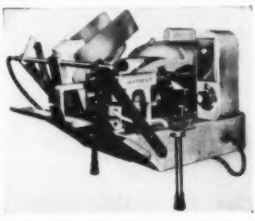
The "Model B" labeler is designed especially for high-production labeling of antibiotics, drugs and medicines. It handles cylindrical vials or bottles as small as 5/16-in. diameter and up, and applies labels postage-stamp size and larger. The Model B, shown at left, applies body labels, front and back labels simultaneously or wrap-around labels at an approximate speed of 90 to 180 per minute. No label can be picked up unless there is a container to receive it; when the container is in position, the label is always ready for it. Labels are not applied until the adhesive is at the proper consistency. This machine also has automatic electrical controls to assure precise, uniform operation.

A NEW CORRUGATED BOX PRINTING MACHINE
for knocked-down containers enables printing of all sides of the box in one operation. The machine, built for General Electric Co.'s Fort Wayne, Ind., plant by The Industrial Marking Equipment Co., 454 Baltic St., Brooklyn 17, N. Y., has a speed of 1,500 cases per hour. Its use reduces inventory problems, since the containers may be printed up as needed. Interchangeable rubber type or mats are used and no make-ready is required. It uses a quick-drying, non-caking ink. Type and roller need not be cleaned after using. Its built-in internal ink reservoir assures thousands of impressions without re-inking. Side rails are adjustable for different sizes of containers and spring-loaded pressure rollers compensate for container thickness. An indexing arm on the drum centers the impression. The printing drum provides space for multiple markings.



A NEW PAPERBOARD TRAY-MAKING MACHINE
recently introduced by the Package Machinery Co., Springfield, Mass., produces a tray with glued tabs inserted in the slots. Blanks used to form the trays have a straight slot, which requires simple die work and should result in lower-cost blanks. Gluing the tabs to the sides is said to result in a stronger, firmer tray. The new machine handles a wide range of sizes and change-over for different sizes is said to be a simple operation. Trays are delivered right-side-up, ready for filling. The machine has an adjustable speed of from 34 to 90 trays a minute.

A VACUUM-FEED HEAT SEALING AND LABELING
machine developed by the Mercury Heat Sealing Equipment Co., 331 N. 11th St., Philadelphia 7, Pa., feeds, folds and seals labels and bags in one automatic operation. It handles polyethylene, Pliofilm, cellophane and other heat-sealing films and foils, and operates at a feeding speed of 45 cycles per minute. The machine has a rugged, self-contained, heavy-duty motor vacuum pump compressor set in a cabinet mounted on rubber tread casters which make it quiet in operation. The complete unit is mobile; it can be moved around easily or remain stationary, and it can be raised or lowered. One label at a time is automatically fed into position. A unique arrangement developed by Mercury gives positive action and feeds the label consistently at any desired speed. A simple adjustment permits the label to be sealed on front or back of the bag. To operate, the switch is turned on and the thermostat set at the desired temperature. The label magazine is loaded, the operator places the mouth of the bag in front of the spring-mounted sealing jaws to start the machine in motion, and the machine then automatically feeds and folds the label, seals the label and the bag, all in one operation. Standard dimensions of the sealing jaws are 1⅛ by 1 by 12 in.; 15-, 18- and 22-in. lengths are also available. The machine can be equipped, if desired, with trademark, code-dating and/or hole-punching dies.



A NEW UNCASER AND WASHER-LOADER
said to speed up bottling-plant operations is being produced by Atkron, Inc., and marketed by the RCA Engineering Products Dept., Radio Corp. of America, Camden, N. J. The machine was recently demonstrated for the first time at The Borden Co.'s milk-bottling plant at Hamilton Park, Ill. Known as the RCA Full-Depth Uncaser and Washer-Loader, the machine is capable of feeding up to 576 bottles a minute and eliminates one of the last steps in the bottling cycle now performed manually. The machine can be made to handle wooden, metal or paperboard cases or cartons and a wide range of types and sizes of bottles. Cases are fed from the case-conveyer directly into the uncaser. Entering the lower portion of the

ALEXIS DE TOCQUEVILLE

on the goals of equality

Providence has not created mankind entirely independent or entirely free. It is true that around every man a fatal circle is traced beyond which he cannot pass, but within the wide verge of that circle he is powerful and free; as it is with man, so with communities. The nations of our time cannot prevent the conditions of men from becoming equal; but it depends upon themselves whether the principle of equality is to lead them to servitude or freedom, to knowledge or barbarism, to prosperity or wretchedness.

(Democracy in America, 1835)

Artist: Feliks Topolski

Equipment and materials

machine, they are carried upward and inverted, with the bottles held in place. Continuing through the machine, the cases reach points at which first the inner rows of bottles and then the outer rows are gently lowered into large revolving transfer wheels with rubber gripping surfaces. Surfaces of the first wheels grip bottles in the center rows as they are released; those in the second set of wheels grip bottles in the outer rows. As they revolve, the two wheels deposit the bottles on conveyor belts which deliver them to the washer-loader. The cases, meanwhile, are delivered to a conveyor or to the right, left, or rear of the machine. In the washer-loader, the bottles are spread to the full width of the automatic washing equipment and then guided into as many channels as required by the washer. Faulty cases or improperly positioned bottles cause a bell to ring. A bottle-supply control automatically keeps an adequate supply of bottles ready to enter the washer.

DESICCANTS FOR PHARMACEUTICAL PACKAGING have been announced by The Davison Chemical Corp., Baltimore 3, Md. This complete line of new desiccants, known as "Dri-Pax" has been designed specifically to meet the needs of the pharmaceutical industry's dehydrated packaging problems through flexibility, low material cost and economy of application. Among the new Davison Dri-Pax products are pelletized

COMPLETE LINE of Dri-Pax desiccants for pharmaceutical packaging, showing pellets, pellets assembled as unit with cap, cellulose acetate dryers and spiral capsules, and packets.

desiccants, wrapped in printed, colored plastic, and supplied in different diameters and thicknesses to fit any type of container or to supply any needed quantity of desiccant. The pellets are said to be inexpensive, have high surface attraction of moisture per unit volume and are readily inserted in any sized bottle by automatic machinery. The pellets are also offered fabricated into bottle caps, so that the cap and desiccant are one unit, thus eliminating a packaging operation. Two other packaging products round out the line: (1) Cellulose acetate spiral capsules or tubular dryers containing Tel-Tale silica gel. This deep blue gel gradually changes to pale pink as it picks up moisture. (2) Heat-sealed packets of webril (fabric) and paper containing silica gel in weights from 1 to 15 grams each. The paper packets are new and somewhat less expensive than those of fabric. The range of the new desiccants is required by variations in pharmaceutical package sizes, shapes, methods of filling, sealing closures and moisture limits. The

Merchandise: Courtesy,
American Home Products Corp., N. Y.

Makes good merchandise sell better... Kodapak Sheet

"Kodapak" is a trade-mark

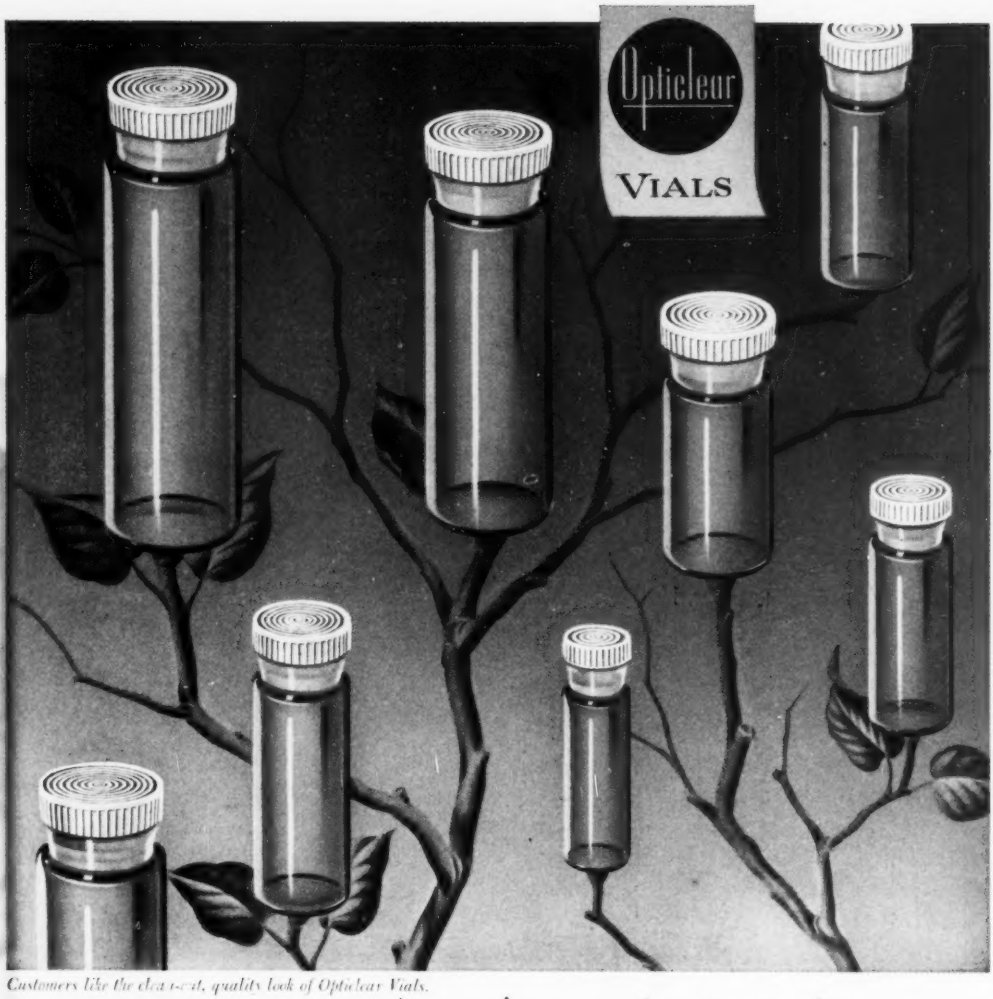
Pharmacist, nurse, doctor, patient . . . all share the advantages when tablets, capsules, surgical and sickroom supplies are prepackaged in handy, open-and-shut units of tough, transparent Kodapak Sheet.

Identification is quick, positive . . . convenience—unlimited, both for retailer and user. Many unusual package designs.

For further information, please consult your local representative or write:

Cellulose Products Division
Eastman Kodak Company, Rochester 4, N. Y.

Sales offices in New York, Chicago, Dallas. Pacific Coast distributor: Wilson & Geo. Meyer & Co., San Francisco, Los Angeles, Portland, Seattle. Canadian distributor: Paper Sales Limited, Toronto, Montreal.



Customers like the clear-cut, quality look of Opticlear Vials.

Give your product the package it deserves —KIMBLE OPTICLEAR VIALS

THESE GLEAMING, lustrous glass containers reflect the superiority of your product.

When you pack in Kimble Opticlear Vials, you give your contents the sales advantage of sparkling eye appeal *plus* unique protection.

New special plastic stoppers provide a positive moisture-proof seal . . . keep contents free from moisture and dust. Even after they are removed and replaced repeatedly, these resilient stoppers reseal tightly.

Opticlear Vials improve the salability of every dry product we've tried in them. Find out how attractive *your* product can look in these outstanding vials.

* * *

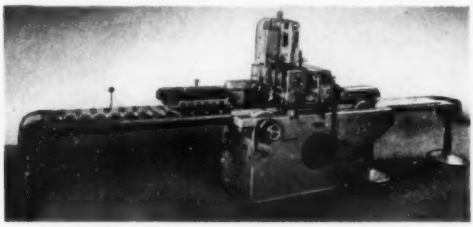
Send us the sizes you use, and we'll ship free samples for your inspection.

KIMBLE GLASS TOLEDO 1, OHIO
Division of Owens-Illinois Glass Company

objective is to meet any desiccant specifications without redesign of the pharmaceutical package. The company believes that the practical design of the new desiccant products may allow changes in the chemical make-up of pharmaceuticals to incorporate desirable ingredients hitherto excluded because of their extreme moisture sensitivity.

A FOREIGN-MADE AUTOMATIC LABELER

with a speed of 120 labels per minute is being introduced in the United States by Alfred Hofmann & Co., West New York, N. J. The Model "REA" machine, manufactured by Jagenberg-Werke Akt.-Ges., Dusseldorf, Germany, handles small and medium-sized articles, square, round, oval or fancy shapes. It



applies front or back, full wrap-around or half-round labels. Articles are carried by a conveyor past a "no-work—no-label" feeler into labeling position. The label magazine, having been released by the feeler, swings across the glue segment which has received a fine film of glue from the twin-roll gluing unit and the segment picks the label from the magazine. The machine can be arranged either for horizontal label application, when a gripper cylinder strips the full surface-glued label from the segment and rolls it on the top side of the bottle or other article, or for vertical label application, when the label is transferred from the gripper cylinder to a set of grippers which hold the label in vertical position ready to receive the article traveling forward from the feed chute. According to individual requirements, articles are fed from a horizontal conveyor belt, inclined chute or vertical stack. After labeling, the article is wiped and pressed by multi-stage units to insure uniform, perfect application.

COLOR MEASUREMENTS

of practically any substance may be obtained with the new "Colormaster Differential Colorimeter" developed by the Manufacturers Engineering & Equipment Corp., Hatboro, Pa.

It is recommended for measuring differences between similar colors for process control applications. In less than 30 seconds, a complete set of color measurements can be made. It is said to be extremely simple to operate and results are taken directly from an easy-to-read dial. The Colormaster is vibration-proof and requires little maintenance. Operation is from 60 cycle, 115 volt power mains. Power required for the instrument is approximately 65 watts.

A NEW HAND ROTARY SEALER

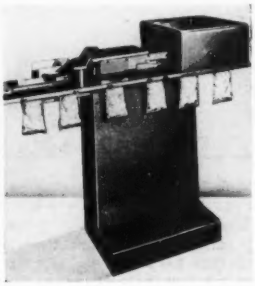
primarily for military packaging that requires large bags, pouches, barriers and inner liners of kraft-backed and scrim-backed laminates is being produced by Pack-Rite Machines,

Equipment and materials

407 E. Michigan St., Milwaukee, Wis. This Model G sealer makes tight seals at splices and overlaps of large enclosures fabricated from spliced material. It is said to enable a vapor and moistureproof seal at points where material is of extra thickness by making a seal with two grooved impressions. When splices are encountered and the seal made over extra thicknesses of material, provision has been made to "soak" in more heat to fuse and soften the thermoplastic. The unit seals with a "once-over" forward operation and can be operated at a speed of about 30 ft. per minute. It weighs only 5 lbs. and is 10½ in. long, 4 in. wide and 6 in. high

A NEW ROTARY SADDLE LABELER

that is said to save up to 70% on labeling costs over present methods has been announced by The Woodman Co., Inc., Avondale Estates, Ga. The Woodman labeler handles any bag size up to 11 in. in width and label widths from 2½ to 8½ in. No special bag materials are required; it heat seals cellophane, glassine, polyethylene, wax and combinations of materials. The seal is said to be strong and airtight, serrated or smooth as desired. It will seal with or without foldover of the bag and with or without foldover of the label. The unit is compact, self-contained and easy to maintain and its use does not require any additional labor.



A SELF-CONTAINED PRE-PACKAGING UNIT

to provide the supermarket and grocery store with everything needed to set up an economical, efficient pre-packaged produce department has been developed by the Shellmar Products Corp., Mt. Vernon, Ohio, in conjunction with The Goodyear Tire & Rubber Co., Akron, Ohio. Called the Bin Service Pak, this new development in the pre-packaging field contains six sizes of special B-S-P Pliofilm bags, closures and a sturdy drop-front storage cabinet with convenient slots for marking pencils, stamp pads, etc. An index on the drop front shows quantities of fruits and vegetables that can be pre-packaged in each bag size. The unit holds 3,650 bags, a sufficient quantity to meet one month's needs of the average store. The Bin Service Pak is being introduced to retailers by Shellmar and Goodyear representatives at an introductory price of $89.75. Thereafter, local jobbers will provide regular service to replenish supplies of the B-S-P bags.

COUNTING AND PACKAGING BY WEIGHT

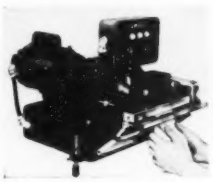
various shaped small parts such as washers, nuts, pins, etc., are said to be speeded up by the new "Weight-O-Pack" machine recently introduced by Inter-Lakes Engineering Co., 4845 Bellevue, Detroit 7, Mich. Parts are placed in a 3-cu.-ft. hopper under which is a vibrating unit. Packages are placed on the platter of a balance-type scale which controls the flow of

Equipment and materials

material. When the required amount of material—less two or three pieces—is in the package, the scale de-energizes the vibrating unit, stopping the flow of parts. The operator then drops in the one or two pieces necessary, according to the chart on the scale, to complete the count. A hand or foot switch starts the filling operation. Floor space occupied by the unit is only 28 by 25 in. It is 6 ft. high. Packages weighing up to 10 lbs. can be handled on the standard machine.

A NEW PORTABLE GUMMED-TAPE DISPENSER that weighs only 2½ lbs. enables sealing cartons wherever they may be without moving them. It measures, moistens, applies and cuts tape in one operation. This patented machine, known as the "Roll-On-Sealer," is marketed by the Mid-States Gummed Paper Co., Chicago, through paper distributors. A non-spilling water tank, said to operate on an entirely new principle in this field, makes it possible to use the machine in any position and to tape with the machine upright, on its side or even upside down. In addition to saving time and handling, the sealer is said to cut tape waste to a minimum. The machine rolls freshly moistened tape directly onto the carton. A twist of the wrist cuts the tape strip to exact length after application. Tape can be dispensed to any length, up to an entire 600-ft. roll, in any width up to 3 in. The machine's mechanism has been simplified to a few quickly replaceable moving parts. The only maintenance operations required are refilling the water tank, rinsing the moistening sponge and replacing worn cutter blades. Tests are said to show that unskilled workers quickly learn to use the sealer in only a few days.

A HIGH-SPEED, AUTOMATIC JAW-SEALING MACHINE with heat, pressure and dwell time fully controlled automatically has been developed by Amsco Packaging Machinery, Inc., 31-31 48th Ave., Long Island City 1, N. Y. Maximum heat penetration to inner sealing bag surfaces is achieved by cartridge-type hermetically sealed heating elements mounted in both jaws. Heat is controlled and instantly adjustable to the requirements of the material being used by a super-sensitive dial-type thermostat. The machine is equipped with an automatic folding bar which eliminates the need for placing bags between the jaws prior to sealing. The folding bar automatically guides the bag tops between the sealing jaws for either straight sealing or folding and sealing. In addition to increasing production, the automatic folding bar also is said to prevent the possibility of spillage from the open end of bags fed into the machine in a vertical or near-vertical position. Sealing surfaces available are crimp, flat or flat with horizontal bead. Standard dimensions of the sealing surfaces are 1 in. wide by 12 in. long. Special leveling plugs permit angling of the sealing jaws for the most comfortable and efficient operating position.



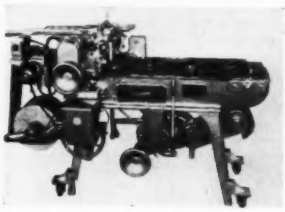
A CONTINUOUS EXTRUDER LAMINATOR for polyethylene, reported to offer substantial savings in operation has been installed by the Dilts Machine Works, Division of The Black-Clawson Co., Fulton, N. Y., at the Carthage, N. Y.,

Equipment and materials

mill of the St. Regis Paper Co. The ability to operate the machine without stopping or slowing down is said to decrease waste, increase production and improve quality. The Dilts machine consists of Kohler System continuous unwinding and winding reels, extrusion laminator and trim slitters. The machines are designed to handle a variety of materials to which polyethylene may be laminated. A sectional DC drive provides a wide range of tension control over the full speed range of the unit.

A special Dilts 80-in. adhesive applicator is now operating in conjunction with a new laminator at the Owens Corning Fiberglas Co. in Newark, Ohio. The applicator is of kiss-type design, with open construction to provide for ease of control, threading and clean-up. In this machine, foil or saran webs are joined to various Fiberglas products with water-soluble adhesives.

AUTOMATIC WRAPPING OF ICE-CREAM SANDWICHES at high speed and at savings in packaging operations is claimed for the new Model ICS machine recently announced by Lynch Corp.'s Packaging Machine Division, Toledo 1, Ohio. The machine has an operating speed of from 30 to 120 packages per minute and produces a package of 15/16 in. high, 2 in. wide and 5¾ in. long. It uses a die-fold wrap, with bottom seal only. Wrapper size is an 8-in. web with 6¾-in. cut-off. Standard equipment includes brackets and casters for portability, no-product–no-paper feed, heat sealer (any heat-sealing papers including thermoplastic-coated materials may be used), wrap register unit with electric-eye control and ½ h.p. moistureproof motor for either 220 volt, 3 phase, 60 cycle or 110 volt, single phase, 60 cycle. The compact unit requires little floor space. It is easily cleaned and sterilized (electrical elements are quickly removed for steam cleaning). It is said to meet sanitation requirements of state and federal health departments.



NEW OBLONG POLYETHYLENE BOTTLES have been added to its line of standard Millsplastic bottles by the Elmer E. Mills Corp., 2930 N. Ashland Ave., Chicago 13, Ill. The new series is available in 2-oz. and 4-oz. sizes and incorporate the Mills Contour Thread, which is a modification of standard finish design. The new oblong bottle is specially designed to prevent the consumer from squeezing the bottle walls together, yet it affords adequate flexibility for optimum spray. They are available in the normal wide range of colors, with the same spray and constrictor inserts and closures as Mills' cylinder and custom-mold bottles.

LIGHTFAST, WATERFAST KRAFT linerboard or paper, custom colored to any deep color or pastel shade, is being offered by the Leeds Sales Co., Inc., 294 Fifth Ave., New York 1, N. Y. This new "Kolorkraft" material is produced by a new process, according to the supplier, and quantities from 1 ton up can be supplied at low cost.

Plants and people

Marathon Corp., Menasha, Wis., manufacturer of packages and packaging materials for foods, has announced an executive reorganization that includes the election of a new president and the creation of three new offices. **John Stevens, Jr.**, senior vice president, succeeds **D. C. Everest** as president. Mr. Everest retains

J. Stevens, Jr. (left) and L. E. Croy

his positions as chairman of the board of Marathon Corp., and chairman of Marathon Paper Mills of Canada, Ltd., the company's principal timber and pulpmaking operation. **Leo E. Croy** was elevated from vice president in charge of marketing to executive vice president in charge of marketing. **Roy J. Sund**, previously vice president in charge of manufacturing, was named executive vice president in charge of manufacturing. **Frank J. Dvorak**, formerly assistant to the president, was named vice president in charge of finance. **D. A. Snyder** continues as vice president in charge of sales.

Eric P. Tuennermann, formerly of the plastics planning and engineering department, has been named production superintendent of **The Dow Chemical Co.**'s new Styron (Dow polystyrene) plant at Allyn's Point, Conn. He succeeds **Dr. J. Lloyd McCurdy**, who will become plant manager of the similar installation at Torrance, Calif., where construction is expected to begin this fall.

Mr. Tuennermann

A. A. Butterworth has been appointed supervisor of plastics sales for Dow's Philadelphia office. **John B. Rutherford** will replace Mr. Butterworth as plastic molding powders salesman for the Philadelphia area.

D. W. McCuaig, formerly in the Cleveland office, has joined the molding powders section in Midland, replacing **W. Harmon Nickless**, who recently resigned to engage in his own business. **Leo J. Bub, Jr.**, has been added to Dow's St. Louis office to handle sales of plastics molding powders.

The Fairfield Paper & Container Co., Baltimore, Ohio, has announced the appointment of **Myron T. Cohen** as general sales manager and **William W. Woodward** as promotion and advertising manager. Both men have been associated for many years with Fairfield, which is a subsidiary of **Gaylord Container Corp.**

The board of directors of **Atlas-Boxmakers, Inc.**, Chicago, has elected **Norbert G. Rennicke** president of the firm.

John B. Plunkett, manager of the aniline ink control laboratory at the Philadelphia plant of **Bensing Bros. & Deeney**, has been elected president of the **Philadelphia Printing Ink Production Club.**

John McCall Marshall, inventor of plastic containers for packaging food in individual servings, has joined **Kraft Foods Co.** in Chicago, where he will develop and direct the company's exclusive merchandising of this new "Portion Control" packaging process (see "Portion Control," MODERN PACKAGING, April, 1952, p. 90). After several years of research, Mr. Marshall developed Portion Control methods and facilities under the initial brand name of Foodies, Inc. The Kraft Foods Co. now has exclusive control of this process for the packaging of food products. Jelly and jam individual-service packages are already in limited distribution and predictions are that many other types and quantities of foods will be brought out by Kraft in these new new packages.

Mr. Marshall

Roy A. Carpenter has been named advertising manager of **Thatcher Glass Mfg. Co., Inc.**, Elmira, N. Y. Mr. Carpenter replaces **George W. Peck**, recently assigned to the Rochester, N. Y., sales office of Thatcher. Advertising for Thatcher's Glass Container and McKee Glass Co. divisions will be handled by Mr. Carpenter.

The Standard Cap & Seal Corp., New York, has announced a change in the name of the corporation to **Standard Packaging Corp.** Corporation personnel and existing policies remain unchanged.

Announcement has been made of the formation of **Jagenberg, Turner & Co., Ltd.**, 350 Bay St., Toronto, Canada, which company will act as sole representative in Canada of the firm of **Jagenberg-Werke Akt.-Ges** of Dusseldorf, manufacturer of high precision machinery for paper mills, paper converters and the packaging and labeling trades. **M. R. Pilz**, vice president and managing director of the new Canadian firm, is an experienced Jagenberg engineer. A service organization will be established for maintenance of all Jagenberg machinery installed in Canada.

The Gardner Board & Carton Co., Middletown, Ohio, makers of paperboard and paperboard containers, have announced the promotion of **Earle Turvey** to Chi-

E. Turvey (left) and F. E. Irsch, Jr.

cago district sales manager and the appointment of **Frank E. Irsch, Jr.**, as New York district sales manager.

James E. Byrns of Springdale, Ohio, has been appointed to the management staff of Gardner Board & Carton Co.

Ralph E. Holt is now junior maintenance engineer for Gardner.

The Oxford Paper Co., New York, has announced the resignation of **Harold H. Holden** as vice president in charge of sales. Mr. Holden will become president and a director of **Eastern Corp.**, Bangor, Me. Oxford's sales organization is now under the direction of **Andrew M. McBurney**, former sales manager, who has been named general manager of sales for Oxford, and **Oliver S. Barrie**, manager of **Oxford Miami Paper Co.** (a wholly owned subsidiary) and Western sales manager of Oxford Paper Co.

Mr. McBurney

Chester Stupp has been named manager of sales service for Oxford. Mr. Stupp's promotion relieves **Harold M. Annis**, formerly manager of product development and sales service, of the latter duties.

The Sorg Paper Co., Middletown, Ohio, has announced the removal of its New York sales office to the Postum Bldg., 250 Park Ave. **T. J. Watson** is Sorg's New York representative.

The United States Rubber Co. has announced the purchase from **Milprint, Inc.**, of Milwaukee, Wis., of its plant in Stoughton, Wis. The purchase includes land, buildings and equipment. The Stoughton plant was built by Milprint in

An "open and shut case" for H&D Boxes

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Plants and people

1947 for the manufacture of plain and printed vinyl films. Milprint sold the plant in order to concentrate on its packaging, printing and lithographic business. U. S. Rubber will use the Stoughton plant for the production of new products, principally light-weight, unsupported and supported plastic films.

Mr. Kane

Raymond P. Kane has been elected vice president of **The United States Printing & Lithograph Co.,** Cincinnati. He is director of purchases and maintains his headquarters at the Mineola, N. Y., plant of the company.

The Bemis Bro. Bag Co., St. Louis, Mo., has announced the appointment of **R. D. McAusland** as director of Western operations of the company and **F. V. Deaderick** as director of Eastern operations. As director of Western operations, Mr. McAusland will supervise all operations, including sales and production, of the Bemis plants at Seattle, Vancouver, San Francisco, Wilmington, Calif., and Los Angeles, as well as the Seattle, San Francisco and Los Angeles sales divisions. Mr. Deaderick will have similar supervision over the Bemis plants at Buffalo, Brooklyn, Norfolk and East Pepperell, Mass., and over the Buffalo, Brooklyn, Norfolk, New York General and New York sugar bag sales divisions.

Minnesota Mining & Mfg. Co., St. Paul, Minn., has announced the appointment of **C. C. Smith,** former general sales manager of the tape division, to head the cellophane tape division. Appointment of two other general managers to head the firm's tape divisions also announced by the company include **William E. Zimmerman,** industrial tapes division, and **Bernard W. Lueck,** masking tapes division.

Mr. Smith

The promotion of **Alan H. Redpath** to the newly created position of merchandising manager of all MMM's tape products has been announced. **R. S. Frommer** is now manager of the tape group's central sales inventory and production planning department.

Dr. Charles W. Walton has been named general manager of the adhesives and coatings division of Minnesota Mining, succeeding **Louis F. Weyand,** who

Plants and people

was recently made executive vice president in charge of all tape operations.

Roland K. Fraser, formerly in the sales research department, has been appointed product development engineer for the **Nashua Corp.,** formerly the Nashua Gummed & Coated Paper Co., Nashua, N. H. Mr. Fraser will assist **B. G. Bundy** in the new Product Development Department and will continue to maintain close liaison with machinery manufacturers.

Mr. Fraser

Russell W. Phillips has also joined the new Product Development Department. He will continue to represent the company's Coating Division in New York.

William L. Reeves has joined the Nashua Corp. as product development engineer.

Mr. Reeves

Manager of the Product Development Department is **Benjamin G. Bundy,** formerly market development manager for Nashua. This new department will combine the functions formerly assigned to sales research and market development.

A new office and ink service station for **Sun Chemical Corp.'s General Printing Ink Co.,** Pacific Coast Division has been opened at 1226 S.E. Grand Ave., Portland, Ore. **W. J. Egan** is general manager of GPI-Pacific Coast Division and district manager of the new Portland branch is **C. D. Richardson.** A Southwest Division of GPI has also been opened, with headquarters at 2506 Tillar St., Fort Worth, Tex. This division will be under the management of **Sid Rochelle.**

The Arabol Mfg. Co. recently completed its 10th unit with the opening of Plant No. 7 in Itasca, Tex. Arabol makes industrial adhesives. Production and sales in the new Itasca plant will be under the direction of **Roger A. Bailey.**

The R. C. Can Co., manufacturer of fibre containers, spools and tubes, has begun construction of a new plant in St. Louis. The new building is expected to be completed by Nov. 1, 1952.

The Mehl Mfg. Co., converters and flexible packaging manufacturers, announce the appointment of **Charles Long** as sales representative in Arkansas, Missouri,

Plants and people

Kansas, Colorado, parts of Oklahoma and Illinois, Memphis, Tenn., and Salt Lake City, Utah. The Mehl Mfg. Co. is a division of the Sydney-Thomas Corp.

Nancy Brady has joined the Market Research Department of **The Dobeckmun Co.**, Cleveland, Ohio, as a market research assistant. Miss Brady was formerly with NBC and the Carr-Liggett Advertising Agency.

Miss Brady

The Haring Equipment Corp., 533 W. Broadway, New York, has been appointed exclusive distributor in America for the Kalix line of automatic filling machines for tubes and jars and other packaging equipment. Kalix machines are widely used in Great Britain and Continental Europe. Sales in the United States will be under the direction of **Doane Hage**, who has represented the Arthur Colton Co. for 30 years in the New York area.

The Heminway Corp., Waterbury, Conn., which completed its 50th year of business under its present ownership on Nov. 4, 1951, has issued a brochure giving a brief history of the company and illustrating the present and former plants, as well as products produced by the firm's box and printing divisions.

H. E. Dennie, formerly Chicago sales representative for the **Chase Bag Co.**, Chicago, has been appointed sales manager of the firm's Philadelphia branch territory. **E. S. Elgin** has been transferred from the Philadelphia branch to the Chicago general sales office. **R. G. Bullock** has returned to his company duties with the Chase Bag Co. after having served a year in executive capacities with the NPA's Containers and Packaging Division. Mr. Bullock manages the company's Cleveland office. **Walter J. Wilks** has been appointed manager of Chase's Chagrin Falls, Ohio, paper mill. **Harry S. Pedley** is now superintendent at Chagrin Falls.

The Rheem Mfg. Co., New York, has established a new manufacturing and engineering division to be known as the Equipment Container Division. **Frederick J. Blume** has been appointed national manager of the new division, with headquarters at 14 E. Saratoga St., Baltimore, Md. **Andrew W. Hughes** is assistant manager and **Ray W. Thrasher** is chief project engineer. Area representatives for the Equipment Container Division are: **E. E. Elliott**, 570 Lexington Ave., New York; **R. L. Wilson**, 4361 Firestone Blvd., South Gate, Calif.; **W. S. Davis**, Hill Bldg., Washington, D. C.; **C. P. Haskell**, 401 Patterson Rd., Dayton, Ohio, and **G. T. Reinert**, 7600 S. Kedzie Ave., Chicago.

Dr. William R. Hainsworth has joined the general engineering division of the Rheem Mfg. Co. He will be stationed at Rheem's Whittier, Calif., laboratories.

The Shelton Mfg. Co., Inc., Newark, N. J., producer of corrugated paper specialties and boxes, has appointed two representatives to handle distribution of corrugated products to paper distributors in their respective territories: **Calvin B. Hubbard Associates**, Linthicum Heights, Md., to cover Virginia, Maryland, Washington, D. C., and Delaware; **D. E. Morgan & Co.**, Columbus, Ohio, to cover Ohio and West Virginia.

David R. Lepper, vice president in charge of **Stone Container Corp.'s** Philadelphia division, has been named a director of the corrugated box firm. Other directors of the firm were re-elected.

Skilly T. Knox has been appointed head of the newly created boxboard sales division of Stone Container Corp.

The Nichols Paper Products Co., Green Bay, Wis., has announced the appointment of **Arthur E. Jackman** as sales engineer in Detroit and the lower Michigan area. The Nichols company produces a flexible cushion-wrap material known as Sof-Rap.

Mr. Jackman

The calendered and extruded vinyl plastic film and sheeting manufacturing business formerly transacted by **Ross & Roberts, Inc.**, at Stratford and West Haven, Conn., is now the **Ross & Roberts Co.**, a division of **Pollak Industrial Corp.** This reflects a merger of already existing interests between **Henry Pollak, Inc.**, and Ross & Roberts, Inc. **Dr. Arthur M. Ross** and **Alvin V. Roberts** continue in complete charge of the business of Ross & Roberts and also become officers and directors of the merged corporation. **Ross & Roberts Sales Co., Inc.**, continues as exclusive sales and technical field representative for Ross & Roberts.

The Sutherland Paper Co., Kalamazoo, Mich., has announced a re-alignment of its field staff with the addition of four new territories. **N. V. Churchill**, who recently joined the sales force, will cover Southeast Missouri, Southern Illinois,

Western Kentucky and the wholesale specialty trade in St. Louis. **Jack Dykema,** whose headquarters will be in Syracuse, will cover Central New York State. **Theo F. Knoth** has been assigned to the Pittsburgh territory, where he will handle both jobber and direct sales. **H. L. Robertson** will represent Sutherland in part of North Carolina and all of South Carolina, with headquarters in Charlotte, N. C.

Mr. Wetli

Announcement has been made of the appointment of **C. A. Wetli** as general sales manager of the **Hudson Sharp Machine Co.,** Green Bay, Wis. Mr. Wetli, vice president of the company, will direct all of the company's sales in the future. He has been with the company for the past 23 years and has been in charge of the Eastern area. Hudson Sharp manufactures paper converting machines, printing presses and packaging machinery.

A series of meetings in New York, Chicago and San Francisco have been held recently by **Container Laboratories, Inc.,** Chicago, for the executive and technical representatives of member companies of the Quality Control and Research Group. The program included discussion of factual bases for improving the quality of corrugated box manufacture and for the sound design of containers.

T. R. Cochrane of the **Arthur Colton Co.,** a division of the **Snyder Tool & Engineering Co.,** has been transferred to Oakland, Calif., to represent the company in that territory. His address is 400 Santa Clara, Apt. 8. **Wallace Doepel** is now assistant sales manager for the Colton firm.

Three executives of the **Aluminum Co. of America,** Pittsburgh, have been elected to newly created vice presidencies. **Gordon W. Cameron,** Alcoa's treasurer, becomes vice president and treasurer. **Arthur P. Hall,** director of public relations and advertising, becomes vice president in charge of those fields. **C. F. Nagel, Jr.,** chief metallurgist, assumes the third new vice presidential post.

Smith Kirkpatrick & Co., Inc., New York export-import firm, has acquired a controlling interest in **Dussi-Wallace & Co., Inc.,** New York, specialist in the foreign sale of plastics raw materials.

F. T. Whited, Jr., and **R. T. Moore** have been elected directors of **Olin Industries, Inc.,** East Alton, Ill.

The Hazel-Atlas Glass Co., Wheeling, W. Va., has announced the following promotions in office personnel: **H. G. Lewis,** elected vice president; **N. G. Ross,** elected treasurer; **C. E. Ewing,** elected assistant secretary. **C. R. Dilmore** has been named purchasing agent for Hazel-Atlas.

The Union Bag & Paper Corp., New York, has announced the appointment of **Frank C. Little** as manager of its newly formed Market Research Department. A member of the Union organization since 1949, Mr. Little previously served as merchandising manager of distributors' products.

Mr. Little

The appointment of **O. S. Carliss** as director of engineering and **George F. Quayle** as assistant director of engineering of the Philadelphia Division of **The Yale & Towne Mfg. Co.** has been announced. Mr. Carliss succeeds **Charles S. Schroeder** and Mr. Quayle replaces **Frank A. Vossenberg,** who were appointed director and assistant director, respectively, of the new company-wide Research and Development Division.

At the annual meeting of **The Hinde & Dauch Paper Co.,** Sandusky, Ohio, the following officers were elected: **W. F. Pfeiffer,** former secretary-treasurer, is now vice president; **W. E. Richardson,**

Plants and people

former assistant secretary, is now secretary; **L. R. Wendt**, former assistant secretary-treasurer, is now secretary-insurance; **G. M. Muehlhauser, Jr.**, former assistant treasurer, is now treasurer. Other officers of the firm were re-elected.

The directors of the **Lynch Corp.**, Toledo, Ohio, have elected **Russell L. Sears** a vice president of the company. Mr. Sears joined Lynch Corp. in 1944 and last year was named general sales manager of the firm's Ohio Divisions. He will continue to base his duties in Toledo.

Mr. Sears

James W. Taylor, formerly with the St. Regis Paper Co., is now in charge of bag sales for the **Kraft Bag Corp.**, a subsidiary of the **Gilman Paper Co.**, operating two completely integrated bag-making plants in Gilman, Vt., and St. Marys, Ga. Mr. Taylor's headquarters are at the company's executive offices, 630 Fifth Ave., New York.

B. T. Miller, who formerly covered the Midwestern territory for Kraft Bag Corp., now covers Alabama, Mississippi, Louisiana, Southwest Tennessee, Arkansas and Texas. His headquarters will be in New Orleans.

Saul Stein Associates, Inc., manufacturers and designers of decorative cans for biscuits and other food products, have moved their offices and showrooms to 207 Fourth Ave., New York 3, N. Y.

Ralph Lampo has joined the **Rubber Latex Co. of America**, Clifton, N. J., as director of research. The company manufactures coatings and laminating adhesives for textiles and packaging.

William Rand Campbell is the new representative in New England for the **Chippewa Paper Products Co., Inc.**, Chicago.

The Miller Printing Machine Co., Pittsburgh, Pa., has announced the acquisition of the inventory, physical assets and trade name of the **Printing Machinery Division** of the **Electric Boat Co.**, Groton, Conn.

George H. Kubes, president of the **American Box Co.**, Cleveland, has been elected a director of the **Wirebound Box Mfrs. Assn.**

Howard E. Whitaker, former executive vice president of **The Mead Corp.**, Dayton, Ohio, has been elected president of


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Plants and people

this paper and paperboard firm. Mr. Whitaker succeeds **Charles R. Van de Carr, Jr.,** who was named director of engineering and chairman of the Engineering and Development Committee. **Donald F. Morris,** vice president in charge of operations, was elected first vice president. The directors also advanced **Leonard R. Growdon** from general manager of the board divisions to vice president in charge of board operations, **George H. Pringle** from chief engineer to vice president in charge of white-paper operations, and **Ford T. Shepherd** from director of corporate relations to vice president in charge of corporate relations. Other officers were re-elected by the board.

Eric de Kolb has been appointed as art director of **Helena Rubinstein, Inc.,** New York.

The Flexible Package Co., Chicago, has acquired the use of a five-story building adjoining its current plant, which the company reports will more than double its present production capacity. The firm's new mailing address is 2627 S. Stewart Ave., Chicago 16, Ill.

S. Curtis & Son, Inc., Sandy Hook, Conn., manufacturer of folding boxes, has announced changes in company representation. **Donald R. McCain,** former sales representative for the Southwestern Connecticut district, has been appointed assistant sales manager. Mr. McCain, in addition to his new duties, will service his established accounts. **Albert Van Wegenan** will assume sales responsibilities in that area. **William Wilson** has been appointed sales representative for the remainder of Connecticut. **Robert Hazen** will continue to represent Curtis in New York and New Jersey.

The Chain Belt Co. is now occupying its new administration building, located at 4701 W. Greenfield Ave., Milwaukee, Wis. The new building is adjacent to the firm's Milwaukee manufacturing facilities.

Charles Matthias, chairman of the board of the **Matthias Paper Corp.,** Philadelphia, died on April 16th. He was 55 years of age. Mr. Matthias went into the paper business in 1912 at the age of 16. He began as a delivery boy for his father's firm. Mr. Matthias was active in the National Paper Trade Assn.

C. Laurence Warwick, executive secretary of the **American Society for Testing Materials** and its administrative head since 1919, died suddenly on April 23.

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TWO-VALVE FILLER. Bulletin on the high-speed Elgin "Speed-King" filler, for liquid and semi-liquid products, which accommodates all sizes of jars or tins from one ounce to one gallon without change parts. Elgin Manufacturing Co. **(F-251)**

TAPE SEALING EQUIPMENT. Folder contains illustrations and data on "Counterboy" gummed tape machines, label moisteners, and envelope moisteners in many models for diversified shipping room use. Better Packages, Inc. **(F-252)**

MILITARY PACKAGING GUIDE. Pocket-size looseleaf folder contains descriptions of military packaging specifications including materials and methods, plus actual samples of military packaging materials. Flexible Package Co. **(F-253)**

TESTING PACKAGES AND PACKAGING MATERIALS. Booklet illustrates the various standard machines for predetermining the characteristics of packages and packaging materials, and explains the manner in which they are used. Data on bursting tests, cushioning tests, tear tests, etc. Container Laboratories, Inc. **(F-254)**

"POLYFILM." Question and answer folder explains the types and grades available and the advantages of packaging in "Polyfilm," the polyethylene film manufactured by Extruders, Inc. **(F-255)**

PROTECTIVE CUSHIONING MATERIAL. The features and advantages of "Celluliner" high compressive resilience cushioning material for interior packaging is described in a bulletin issued by the Gilman Brothers Co. **(F-256)**

FOIL TUMBLER CAPS. Folder describes the advantages of sealing cottage cheese and other products in re-usable tumblers capped with "Alseco" foil caps. Aluminum Seal Co., Inc. **(F-257)**

BOTTLE WRAPPER. Bulletin tells about a semi-automatic machine for wrapping regular and odd shaped bottles in transparent film. Charles E. Douglas & Co. Ltd. **(F-258)**

CYLINDRICAL MARKING MACHINE. The Markem Model 20A, a machine specifically designed for marking radio tubes and other cylindrically shaped items at high speed, is described in a bulletin issued by Markem Machine Co. **(F-259)**

TANDEM LABELERS. Bulletin describes and illustrates the construction and operation, with floor plans, for twin, triple and four-unit World Tandem labelers for 75 to 300 bottles per minute. Economic Machinery Co. **(F-260)**

END LOADING CASES. Advanced techniques for end loading shipping cases and the machines for achieving best results are discussed. Includes data on sealing machines. J. L. Ferguson Co. **(F-261)**

WAXING EQUIPMENT. Booklet diagrams eight typical arrangements used in waxing paper. Shows the various major sections of which waxing equipment consists. Dilts Mahcine Works, Div. of The Black-Clawson Co. **(F-262)**

"DRUMPAK." Folder explains the advantages of "Drumpaks" which are extra strong, custom constructed three-piece shipping containers for a wide range of products. Gaylord Container Corp. **(F-263)**

POCKET ENVELOPE MACHINE. Description of a machine which operates from previously cut and printed sheets and produces seed bags, pay envelopes and bags for food, chemical and sundry industries. Hol-Bag, Inc. **(F-264)**

TABLET COUNTERS. Specifications, features, and operational information on the Model 20 and Model 17 tablet counters. The Lakso Co., Inc. **(F-265)**

AUTOMATIC WEIGHING SYSTEM. Discussion of the "Hy-Tra-Lec" Model CE system for fully automatic weighing and filling of rigid containers with crackers, cookies, biscuits, and similar free-flowing products. Wright Machinery Co. **(F-266)**

"PACK TO ATTRACT." Booklet illustrates many of the methods by which corrugated shipping containers can be effectively used to dramatize and increase the sales of products. The Hinde & Dauch Paper Co. **(F-267)**

LABELING MACHINE. The "Jagenberg" Type III labeling machine which is particularly adaptable for fast, easy change over on an extremely wide range of container and label sizes and shapes, is described in a folder issued by Alfred Hoffman & Co. **(F-268)**

"RAYCO" FLOCK. Booklet enumerates the forms and materials in which "Rayco" flock is obtainable and suggests various uses for each type. The Rayon Processing Co. of R. I. **(F-269)**

AUTOMATIC CARTONING MACHINE. Brochure on CECO Model 45, a completely automatic cartoning machine which is adaptable to both single and multiple unit packaging. Container Equipment Corp. **(F-270)**

ENGRAVED INKING ROLLERS. Bulletin illustrates various "Evenflo" precision engraved rolls for applying ink, plastic, adhesives, and other fluids in aniline presses. Paper Machinery and Research Corp. **(F-271)**

PACKAGING MACHINES. Folder describes various machines for high speed packaging of items as diverse in shape as lollypops and rolls of paper towels. Package Machinery Co. **(F-272)**

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IMPRINTING MACHINES. Booklet shows how some typical marking problems connected with the nation's defense program are being successfully met with machines manufactured by Adolph Gottscho, Inc. **(F-273)**

SEMI-AUTOMATIC LABEL FEED. Bulletin describes an attachment which converts Potdevin hand-fed label pasters into semi-automatic models, thereby increasing production more than 50%. Potdevin Machine Co. **(F-274)**

MARKING EQUIPMENT FOR INDUSTRY. Catalog with data on various marking machines—conveyor line markers, multiwall bag printer, a corrugated and fiber shipping case printer, and several hand operated printers. Contains chart of available base-lock rubber type and price list. Industrial Marking Equipment Co. **(F-275)**

PROTECTIVE CUSHION WRAP. Booklet tells about "Sof-Rap," a new exterior-interior wrap and "Krepak," a single-ply crinkled interior wrap cushioning, both of which should interest manufacturers and packagers of hard goods. Nichols Paper Products Co. **(F-276)**

PATTERN ENGRAVINGS FOR RUBBER PRINTING PLATES. Folder explains the superiorities of extra-depth pattern engraving in making rubber printing plates. Compares examples of printing from rubber plates made with zinc mold patterns and with extra-depth mold patterns. Mosstype Corp. **(F-277)**

CORRUGATED AND SOLID FIBREBOARD BOXES. Booklet traces the manufacture of corrugated and solid fibreboard boxes and products through all steps from the tree to the finished product. National Container Corp. **(F-278)**

WRAPPING MACHINE. Folder describes an automatic packaging machine which wraps irregularly shaped, fragile and other difficult products in foil, cellophane, glassine, etc. and can be quickly changed from one size to another. Wrap-King Corp. **(F-279)**

CHECK WEIGHING EQUIPMENT. An explanation of the features and operation of "Selectrol" equipment for automatic sorting of overweight and underweight packages as they move along the packaging line. The Exact Weight Scale Co. **(F-280)**

BAGS AND WRAPS. Portfolio of flexible package samples converted from all types of films and papers and featuring such graphic arts processes as rotogravure, aniline and letterpress. Oneida Paper Products, Inc. **(F-281)**

MARKING MACHINES. Folder illustrates and describes ten different models of "Rejafix" marking and printing machines which will print any color, any design on the surface of any material at the time of manufacture. Popper & Sons, Inc. **(F-282)**

TAPES FOR SEALING. Bulletin gives applications and physical properties of "Scotch" brand pressure sensitive tapes for can, tube and bottle sealing. Minnesota Mining and Manufacturing Co. **(F-283)**

ROTARY PISTON FILLERS. Folder lists specifications and gives descriptions of four rotary piston fillers which fill all products that can be handled by a gear or piston pump. The Pfaulder Co. **(F-284)**

CONTAINER PLUGS, SLEEVES, AND CAPS. Illustrations and dimensions of various container plugs, sleeves, and caps that give protection against dust and dirt and damage during spraying, are given in this bulletin. Cleveland Container Corp. **(F-285)**

CARTONING MACHINES. Folder shows a variety of fully automatic and semi-automatic continuous motion cartoning machines for handling products of different sizes and shapes. Standard-Knapp, Division of Emhart Mfg. Co. **(F-286)**

HYDRAULIC CORE JACK. Folder tells about the Dusenbery Model 560 hydraulic core jack for simplifying the operation of pressing chucks into mill rolls. Specifications included. John Dusenbery Co., Inc. **(F-287)**

ROTOGRAVURE PRESS. Folder describes Kilb's miniature rotogravure printing press designed for printing narrow webs at high speed in one to four colors. Price list included. Francis C. Kilb Co. **(F-288)**

AUTOMATIC BAGGING SCALE. Bulletin illustrates and describes the Richardson Model E-50 automatic electric bagging scale, capable of weighing practically all materials packaged in open-mouth paper or textile bags. Richardson Scale Co. **(F-289)**

IN-LINE CARTON MAKER. Reprint of two magazine articles about an automatic carton machine which prints, die cuts and strips in a single pass of roll stock through tandem equipment. Champlain Co., Inc. **(F-290)**

HOW TO USE GUMMED TAPE. Leaflet points out step-by-step procedure for maximum protection and economy in the application of gummed tape to shipping containers Gummed Industries Association, Inc. **(F-291)**

LARGE MODEL "TRANSWRAP." Details about the Model "C" Transwrap, a new machine for automatically forming, filling and sealing packages up to 9¾" by 13¾". Transparent Wrap Machine Corp. **(F-292)**

FLUORESCENT COLORS. An explanation of "Day-Glo" fluorescent color materials and the various forms in which they are available. Switzer Brothers, Inc. **(F-293)**

"VUEPAK" FOR TRANSPARENT PACKAGING. Product report gives detailed analysis of various packaging uses of "Vuepak" cellulose acetate plastic sheet. Monsanto Chemical Co. **(F-294)**

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For your information

The American Society for Testing Materials will hold its 50th anniversary meeting in New York, June 23-27. Headquarters will be at the Hotels Statler and New Yorker. The Society's annual dinner will have as chief speaker **Dr. Detlev W. Bronk**, president of the National Academy of Sciences and head of Johns Hopkins University. Throughout the week, hundreds of the Society's technical committees will be meeting. An apparatus show will be held at the Statler, where some 60 manufacturers and distributors will introduce new equipment and supplies. An advance program is available from the American Society for Testing Materials, 1916 Race St., Philadelphia 3.

Special packaging problems encountered in supplying and feeding our armed forces were reviewed and progress evaluated at the fifth annual meeting of the **Research and Development Associates, Food and Container Institute,** held at the Palmer House, Chicago, April 15, 16 and 17. Among military personnel who addressed meeting sessions to outline developments in their respective fields were **Rear Adm. Murray L. Royar,** Chief, Bureau of Supplies and Accounts, USN; **Maj. Gen. Joseph P. Sullivan,** USA, Quartermaster, Army Field Forces; **Col. F. E. Calhoun,** USAF; **Col. C. W. Betzold,** Commandant, Army Medical Service, Meat and Dairy Hygiene School; and **Lt. Col. K. S. Thornburg,** Commandant, Quartermaster Subsistence School. Additional speakers were **Dr. D. K. Tressler,** scientific director, QM Food and Container Institute; **C. W. Kaufman,** vice president in charge of activities of the Associates; **Dr. Floyd L. Miller,** vice chairman, Research and Development Board, Department of Defense; and **Dr. A. Stuart Hunter,** technical director, Research and Development Div., office of the Quartermaster General. The final day of the meeting included tours of the Army Medical Service, Meat and Dairy Hygiene School; the Quartermaster Subsistence School and the Quartermaster Food and Container Institute.

The Packaging Assn. of Canada plans point-of-sale research, intensive studies of export packing and shipping, and educational work among the projects to be carried out this year and in 1953. **John P. Gledhill,** president, outlined the plans at the association's regional packaging conference in Montreal on April 22. "Coordination of the art of point-of-purchase merchandising with the packaging field" was stressed as an important immediate objective. With regard to the importance of proper export packaging, Mr. Gledhill pointed out that about 25% of Canada's production goes into overseas markets. Sharing sponsorship with the universities in such centers as Montreal and Toronto, the association intends to launch a series of short courses, meeting once weekly in the evenings over a three-month period, to answer the demand for information by people responsible for design and production of packaging in their companies. Mr. Gledhill pointed out that, despite the fact that "packaging around all the facets of the art is a $500,000,000 industry in Canada," yet not one university is teaching packaging.

On Oct. 21-23, in Toronto's Coliseum, the Packaging Assn. of Canada will hold its first annual Packaging Exposition, at which it is hoped to be able to establish an annual exhibit of point-of-purchase displays produced in Canada.

Robert C. Cragg, Chicago regional manager for Gould-National Batteries, Inc., will be general chairman of the seventh annual exposition and short course of the **Society of Industrial Packaging & Materials Handling Engineers.** The short course, Oct. 13-16, 1952, in Chicago, will be sponsored jointly by the society and the College of Engineering of the University of Illinois in cooperation with the university's Extension Division. The theme will be "Increased attention to packaging and materials-handling cost reduction as a basic factor in maintaining profit."

A booklet titled "How to Use Holiday Corrugated Boxes" has been added by **The Hinde & Dauch Paper Co.** to its "Little Packaging Library." The 28-page booklet discusses the requirements of holiday and special-occasion gift packaging in terms of color, design, finish and die cutting, and contains photographic illustrations of more than a dozen different types of holiday corrugated boxes as used by well-known manufacturers. The booklet is available from The Hinde & Dauch Paper Co., Sandusky, Ohio.

"Bin Service Pak," a self-contained unit which contains all supplies needed by a retailer in organizing a produce pre-packaging department, is described in a new brochure from **Shellmar Products Corp.** In addition to illustrations, the brochure contains samples of special B S P Pliofilm produce bags. The brochure, written for retailers, is available from Shellmar Products Corp., Mt. Vernon, Ohio.

Charles Lein, Goodyear Tyre & Rubber Co. (Gt. Britain), Ltd., was elected chairman of the **Institute of Packaging** at the annual meeting held in Birmingham in April. He is sales manager of the company's Pliofilm Div. and pioneered the introduction of this packaging material in Great Britain. At the same meeting, **G. H. M. Rosam,** Parnall (Yate), Ltd., was elected vice chairman.

A proposed Vinyl Plastic Film Standard and a general plan for Trade Practice Rules were presented to more than 100 representatives of companies in this branch of the plastics industry at a recent meeting of the **Society of the Plastics Industry, Inc.** The Vinyl Film Standard is practically ready for submission to the U.S. Dept. of Commerce for promulgation into a Voluntary Industry Standard and represents work by the Society over a period of six years.

The Society plans to set up a regularly appointed administrative committee to coordinate the technical activities with the increasing marketing functions. The establishment of this organization is in the hands of a committee which includes **F. A. Abbiati,** Monsanto Chemical Co.; **C. O. DeLong,** B. F. Goodrich Co.; **J. P. Frank,** Presto Plastic Products Co.; **Elmer French,** Firestone Plastics Co.; **George C. Miller,** Bakelite Co.; **Arthur M. Ross, Jr.,** Ross & Roberts, Inc.; **Fred S. Strauss,** Harte & Co., Inc.

Of interest to many American packagers is the recently published Third Edition of the "**Packaging and Display Encyclopaedia,**" published in England by George Newnes, Ltd., Tower House, Southampton St., Strand, W.C.2, London. This is

What's doing

June 15-20—**National Assn. of Display Industries,** New York.

June 16-19—**Canadian Paper Box Mfrs. Assn.,** Montebello, Quebec.

June 19-20—**American Management Assn.** (General Management), Waldorf-Astoria, New York.

June 23-25—**Forest Products Research Society,** 6th annual meeting, Milwaukee, Wis.

June 23-27—**American Society for Testing Materials,** 50th anniversary meeting, New Yorker and Statler Hotels, New York.

July 13-18—**National China Glass & Pottery Show,** Hotel New Yorker, New York.

July 28-Aug. 8—**Chicago Gift Show,** LaSalle Hotel & Palmer House, Chicago.

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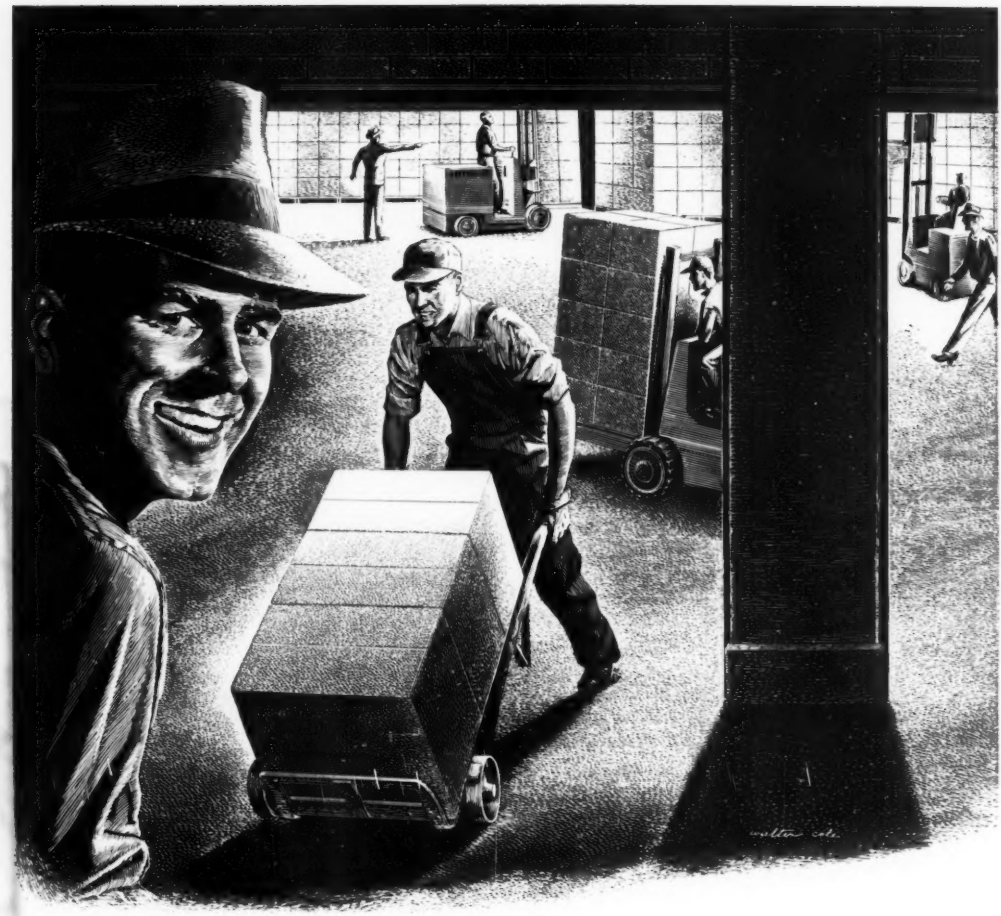

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For your information

a thoroughly revised edition and contains a special section on Packaging for Overseas Markets. More than 60 experts in various branches of packaging have combined to present to the package user the most up-to-date and reliable information on packaging and display questions. A Buyers' Guide has also been added to serve as a convenient reference to sources of supply. The 879-page volume is fully illustrated and carries many actual tipped-in packaging materials and packages.

The Second Annual Conference and Exposition of the **Produce Prepackaging Assn., Inc.**, was held June 10-12. **Glendon W. Sippel,** president of the association, addressed the opening of the conference. A symposium on "Cost Reduction" was held covering in-transit refrigeration, ripening rooms and refrigeration, efficiency through mechanization, storage and care of materials, and the choice of between-season items to be packaged. A forum on tomato pre-packaging and its effect on the entire pre-packaging industry was the feature of another session.

"Askania Edge Position Control" is described in Bulletin 141, a new publication by the **Askania Regulator Co.** This equipment is designed for the continuous automatic positioning of moving webs of paper, textiles, plastics, films, foils and metals. Clear diagrams illustrate application and operating principles. Copies are available from Askania Regulator Co., 240 E. Ontario St., Chicago 11.

The American Can Co., New York, has been awarded a "Certificate of Management Excellence" by the American Institute of Management. This non-profit foundation, devoted to the study and improvement of corporate organization and management, bases its awards on each company's achievement in 10 separate fields: economic function; corporate structure; health of earnings growth; fairness to stockholders; research and development; directorate analysis; fiscal policies; production efficiency; sales vigor and executive evaluation.

Advertising correction

Through a printer's error, **Vanant Products'** advertisement in the April issue omitted mention of the company's Boston sales office. Vanant's Boston representative is **Bud Hatch,** 43 Leon St., Boston 15, Mass.

The Packaging Machinery Mfrs. Institute will hold its 20th annual meeting at the Homestead, Hot Springs, Va., Sept. 11-14, 1952. Chairman of the program committee is **Charles L. Barr,** executive vice president, F. B. Redington Co.

The Institute held its semi-annual meeting in Atlantic City recently, during Packaging Week.

Color cards for two new color lines exclusively for silk-screen-process printing have been announced by the **Advance Process Supply Co.** "Signal Silk Screen Process Colors" are intended for hand or machine operation on paper, cardboard, wood, Masonite or other materials, and offer positive drying qualities. "Advance Weatherproof Gloss Enamels," said to be suitable for use on practically any material, including glass, are designed to withstand outdoor exposure. Both color cards are to be had free from Advance Process Supply Co., 1042 Harrison St., Chicago 7.

Winners of the 1952 Gardner Scholarships have been announced by the **Gardner Board & Carton Co.** Each of the four winning high school students will receive $500 a year for four years of college. Gardner established the scholarship fund during its 50th anniversary in 1950. The scholarship winners, all with outstanding high school records, have been offered summer jobs in the company's plants and offices in Middletown, Ohio.

How discoveries in the psychophysics of color can be put to dollar-saving use in business is explained in a new book by **Dr. Deane B. Judd** entitled "**Color In Business Science and Industry**" (John Wiley & Sons, Inc., New York; $6.50). The book answers important questions in practical terms—in terms of the purchase, production and sale of commodities whose color has an important bearing on their usefulness and price.

The American Management Assn. has published a research study, "**Planning and Developing the Company Organization Structure,**" based on an analysis of 40 top companies considered to have harmonious organization structures and a spot-check of 150 other companies on specific questions. The research report was written by **Ernest Dale,** AMA research associate and assistant professor of industrial relations at the Graduate School of Business, Columbia University. The 250-page book is available from the American Management Assn., 330 W. 42nd St., New York, at $3 to AMA members and $4.50 to non-members.

Washington review

John C. Clay has taken over the duties of Director of the Containers and Packaging Division of NPA. He succeeds Robert de S. Couch, who served as director of

J. C. Clay (left) and R. de S. Couch

the division since September, 1951. Mr. Couch has returned to General Foods as special assistant to the general manager of the carton and container division.

Mr. Clay is on leave as assistant to the executive vice president of National Starch Products, Inc., New York City. He has been associated for 14 years with National, manufacturers of starch products, industrial adhesives and synthetic resins. During the past 10 years Mr. Clay has specialized in military packaging and all types of packaging problems in the paper, paperboard container, transparent film, can and bottling industries.

Another personnel change in the Government defense program, of interest to packagers, is the appointment of Thomas H. Mullen as Deputy Director of the Pulp, Paper and Paperboard Division of NPA. Mr. Mullen succeeds L. D. Nicolson, who has resigned to take an executive position with the National Vulcanized Fibre Co. of Wilmington, Del.

Meanwhile, Henry H. Fowler has taken over as Defense Production Administrator, succeeding Manly Fleischmann. Mr. Fowler is also NPA Administrator.

The incoming personnel face many problems of decontrol as a result of NPA policies pledged to the lifting of restrictions as rapidly as the attainment of defense production goals will permit. Barring unforseen emergencies, NPA activities in the second half of this year may find the controls program operating in almost the exact reverse of the steps taken in late 1950 and 1951 to shore up our economy against critical shortages.

Midyear outlook

Decontrol will be a widely used term in the coming months. Two orders—lead order M-34 and steel shipping container order M-75—have been revoked, adding to the boxscore that already included metal strapping order M-59 and glass container simplification order M-51.

Supplies of steel and aluminum, paced by tremendous expansion and helped by easing demand, are greatly improved. Authorities in both Government and industry are looking ahead to a gradual relaxing of curbs that may produce almost-free usage, except for defense priorities, in the fourth quarter.

NPA expects to eliminate direct allocation controls for about 90% of all U. S. aluminum users this summer by permitting third-quarter self-certification allowances of aluminum greatly exceeding amounts permitted in the second quarter.

Present chemicals allocations are likely to be continued for some time. Twelve chemicals have been under allocation, but four of these have been decontrolled.

Metal cans

A recent change in can order M-25 permits packers whose needs have increased to take advantage, on a percentage basis, of the surplus allotments of packers who have not used permitted quotas.

All Group I products are to have unlimited quotas. Quota percentages are increased from 90 to 100% for products in Group II and from 70 to 90% for products in Group III.

Other changes permit unrestricted use of cans or can parts made entirely of blackplate and secondary grades of blackplate; also, unrestricted use of cans and parts made entirely of tinplate waste.

The can order is also relaxed by several other provisions that relate to the amount of tin used.

Packaging closures

The special inventory limitations in closure order M-26 in regard to aluminum closures and closure liners have been deleted. Inventories of both tinplate and aluminum closures are still controlled by NPA Regulation 1.

The use of aluminum for packaging closures and closure liners, however, is relaxed to implement the distribution of aluminum, which is now in better supply.

Prior to the new amendment, M-26 restricted the use of aluminum for closures for many products to 35% of base-period usage. These products included closures used for bottled drinks, cosmetics, chemicals and other items. The allotment of aluminum for such closures now will be on 45% of the base as established for third-quarter civilian-type items.

Polyethylene

Allocation of polyethylene may be continued several more months or longer, in spite of increased production and brightening prospects for those users who depend on "free" distribution. Future military demand continues to be unpredictable. The threat of suddenly expanding military usage is probably just marginal enough to retain allocations.

In May, the military take was 21%, but there are signs this will increase in coming months and, in the event of a big war, military usage would skyrocket.

Essential users also received about 21% of the available polyethylene last month and nearly 60% was available for producers to distribute to customers as they saw fit. Meanwhile, allocations recently were removed for some packaging uses, including pharmaceutical closures.

Production expansion, reportedly, was of a sizable amount last month, with still more to come. Producers, foreseeing greatly expanded capacity in the next two or three years, are said to be eyeing the packaging market with special interest. The present usage in this field is now thought to be only a fraction of what is to come.

BOXSCORE ON PACKAGING CONTROL ORDERS*

Order No.	*Title*	*Administrator*	*Division*
M-1	Iron and Steel	Charles Holcomb	Iron and Steel Div.
M-8	Tin	W. L. Raup	Tin, Lead and Zinc Div.
M-24	Tinplate and Terneplate	M. H. Watkins	Iron and Steel Div.
M-25	Cans	R. J. Small	Containers and Packaging Div.
M-26	Packaging Closures	H. B. Esselen	Containers and Packaging Div.
M-27	Collapsible Tubes	C. A. Collett	Containers and Packaging Div.
M-38	Lead	*Revoked*	
M-45	Sched. 5 Polyethylene	Edward Smith	Chemical Div.
M-51	Glass Containers	*Revoked*	
M-59	Strapping	*Revoked*	
M-67	Aluminum Foil, Converted	Glenn E. Carter	Containers and Packaging Div.
M-69	Sulphur	John F. Wood	Chemical Div.
M-75	Steel Shipping Drums	*Revoked*	

* As of May 20, 1952.

U. S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted.

Edited by H. A. Levey

Bottle Carrier and Handle For Use Therewith, I. Nadolsky and L. D. Morehouse (to Metal Carrier Corp., Grand Rapids, Mich.). U. S. 2,589,423, March 18. A bottle carrier having a bottle basket with a longitudinal spacer and transverse struts, a detachable handle comprising a substantially U-shaped member with a central gripping portion and depending leg portions capable of retracting movement, each of said leg portions being slotted at its end to provide a pair of fingers, said fingers terminating in outwardly extending hook portions bent inwardly at their tops which overlie and underlie struts and thereby hold handle in a fixed vertical position.

Container Filling Machine Having Feed Screw With Cylindrical Bore Forming Member, F. G. Thompson, Kennet Square, Pa. U. S. 2,589,583, March 18. In a container-filling machine comprising a container support yieldably displaceable in a vertical direction between predetermined limit positions, means normally urging container support to its upper limit position, a feed hopper disposed above container support and provided with an elongated delivery tube.

Package and Method Of Packaging, G. C. Cunningham and R. Weldon (to North America Aviation, Inc.). U. S. 2,589,604, March 18. A packaging arrangement for a sheet of glass comprising a container of yieldable material strips of tape having adhesive applied to two sides thereof attached to sides of the glass sheet and to corresponding sides of said container.

Package With Cover or Support Therefor, L. L. Salfisberg (to Ivers-Lee Co., Newark, N. J.). U. S. 2,589,735, March 18. A package comprising an envelope including two superposed separate flat sheets of packaging material, at least one of which has a thermoplastic surface that faces and is sealed to the other sheet along all marginal portions of the latter in zones forming and encircling a commodity compartment between the sheets.

Container Sealing Machine, H. B. Silver (to Plastic Seal Corp., Brooklyn, N. Y.). U. S. 2,589,740, March 18. In a container sealing machine, a container-supporter means on the frame, means for discharging sealing fluid onto the joint between a container and its closure on supporting means and means for constantly moving said member in one way about said line.

Labeling Machine, K. H. Fairest (to Morgan Fairest, Ltd., Sheffield, England). U. S. 2,589,787, March 18. A labeling machine having a rotatable delivery box with suction openings in its sides to hold labels transferred, gummed side out, but suction pusher movable towards and from a side of the box in one position of the box, intermittent rotation of box carrying label to another position for application of the label to the article to be labeled.

Machine For Prebreaking, Gluing, Folding, Delivering and Stacking Creased Carton Blanks, H. S. Labombarde (to The International Paper Box Machine Co., Nashua, N. H.). U. S. 2,589,944, March 18. In an apparatus for prebreaking carton blanks having a glue lap, a glue lap crease, a center crease, a mid-crease between the glue flap and the center creases, and a mid-crease in the panel at the opposite side of center crease, the combination of supporting and cooperating superposed carriers acting to move the blank therethrough, panel folder and panel opening means acting successively to prebreak the center crease and return the panel to open position and an ironing roll to iron the panel flat through 180 deg. at the center crease as the panel is folded.

Bag Sealing Machine, A. E. Almgren and J. P. Jakob (to American Can Co., New York, N. Y.). U. S. 2,590,081 and 2,590,082, March 25. In a machine for sealing a bag or other flexible container filled with articles, the combination of a movable support, a cradle carried on support for receiving and holding a filled bag to be sealed, said cradle having a movable side wall expandable to receive and contractible to hold a bag in said cradle.

Knockdown Box, R. M. Bergstein, Cincinnati, Ohio. U. S. 2,590,371, March 25. A box structure formed of three separate panels of plastic sheeting material which is non-scorable, said sheeting panels having their end portions bent so that the panels are substantially U-shaped in longitudinal section and permanently set in the bent condition, said panels being hingedly articulated together along the bases of the U's by means of narrow strips of flexible hinging material secured to marginal edge portions of adjacent panels.

Sleeve For Bag Valves, H. Peters and C. D. Pierson (to Raymond Bag Co., Middletown, Ohio). U. S. 2,590,568, March 25. In a bag having a part folded inwardly to form a valve, a sleeve for said valve comprising a section of sleeve-forming material folded upon itself and supported in valve with fold line thereof adjacent to and parallel with the fold line of valve.

Feeding Of Tapered Articles, J. Klopak (to General Motors Corp., Detroit, Mich.). U. S. 2,590,710, March 25. A circular carrier having a series of peripherally spaced radial pockets, means for intermittently rotating the carrier, means for inserting tapered articles small end foremost into the pockets, an arcuate retainer covering a portion of the periphery of the carrier and retaining said articles small end foremost in the pockets as the articles travel beyond the horizontal position and a discharge block adjacent to retainer end receiving articles from pockets.

Insulated Box, J. Ruthven, Jr., Rockland, and R. G. Harrison, North Quincy, Mass. U. S. 2,590,724, March 25. In a double-walled insulated box, a single blank of corrugated board folded to form the box, the outer walls being joined by folded vertical edges except at one vertical edge, the pair of outer walls which meet at vertical edge being joined together by a flap of one of said walls, a reinforcement secured to the exterior of the box to seal the joint between pair of walls, each of the inner vertical walls being connected to an outer wall by a flap.

Shipping Crate, B. C. Coit, Jr. (to Tri-State Engineering Co., Washington, Pa.). U. S. 2,590,941, April 1. A crate having vertical walls whose lower edges are adapted for connection to a bottom wall, means for releasably connecting the vertical walls together at corners of the crate, comprising vertically extending guide devices on one vertical wall and having a latch bar which has an elongated loop.

Apparatus For Filling Liquid Containers Having Vertically Adjustable Tank and Constant Level Valves, L. G. Huggins and W. H. Bulcao (to Horix Mfg. Co., Pittsburgh, Pa.). U. S. 2,591,071, April 1. In a container-filling machine, the combination with a continuously rotatable tank provided in its bottom with a plurality of circumferentially spaced liquid outlets.

Packet-Making Machine, J. W. Chalmers and D. R. Patrick (to Molins Machine Co., Ltd., London, England). U. S. 2,591,135, April 1. In the manufacture of packets having overlapping flaps adapted to be secured together by means of adhesive, apparatus for securing such overlapping flaps of a packet, comprising a rotatable wheel having pockets of a size and shape adapted to receive and accurately hold in desired shape and locate partly finished packets, the packets being open on a side of the wheel at which such flaps are located.

Can Sealer, L. P. Clearly and C. G. Farr (to Wilson & Co., Inc., a corporation of Delaware). U. S. 2,591,136, April 1. A can sealer for a circular can comprising a frame, three spaced rollers mounted on frame, rollers being adapted to be circumferentially spaced about the side wall of the circular can top.

Apparatus For Feeding Labels Or Blanks, W. A. Roffey, C. A. Tredget (to Molins Machine Co., Ltd., London, England). U.S. 2,591,199, April 1. Blank-feeding apparatus for use in wrapping machines, blanks being successively fed into a position intersecting the path of advance of a series of articles to be wrapped, comprising a pair of coacting feed rollers for engaging and forwarding successive blanks.

Bottle Crate and Liner Therefor, J. Kuchel, Arlington, Va. U. S. 2,591,266, April 1. In a bottle case having a bottom structure provided with a plurality of relatively spaced cir-

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U. S. patents digest

cular openings, the improvement comprising a liner in case, liner comprising a rectangular-shaped blank, a bottom portion and oppositely disposed end portions with circular recesses in the lower surface of the bottom portion and slits in the upper surface of the bottom portion forming V-shaped sections which overlie the recesses.

Egg Carton, J. W. Lennon (to Shellmar Products Corp., Chicago, Ill.). U. S. 2,591,446, April 1. An egg carton including a pair of substantially pan-shaped sections hingedly connected together along a fold line, one of sections having a series of spaced egg-receiving recesses therein.

Molded Pulp Container, W. J. Schwertfeger (to Keyes Fibre Co., Waterville, Me.). U. S. 2,591,471, April 1. A molded pulp device adapted as a container for fragile articles comprising a body member formed with a plurality of rows of cups separated by division walls extending longitudinally and transversely of the body member, a row of spaced posts serving as jointure members for the longitudinal and transverse walls.

Collapsible Cardboard Carton, H. C. Bloomer (to Bloomer Bros. Co., Newark, N. Y.). U. S. 2,591,500, April 1. A collapsible carton made from a single blank of foldable sheet material cut, scored and folded to form a bottom panel having end walls hinged to the opposite ends thereof and reinforcing strips folded reversely at the opposite sides thereof and glued to panel and end walls.

Sanitary Milk Bottle Capping Head, R. E. Bodendoerfer, D. C. Fee and H. C. Frentzel (to Federal Mfg. Co., Milwaukee, Wis.). U. S. 2,591,501, April 1. A milk-bottle capper comprising, a vertically movable suspended frame having an integral protruding base provided with integral opposite side rails and also having a receptacle for delivering closure caps through the base, a feed slide movable along the lower surface of base to transfer the successive caps from receptacle to a laterally disposed capping zone.

Insulated Container, R. W. McNealy and J. A. Glassman, Chicago, Ill. U. S. 2,591,578, April 1. An insulated container comprising a thin-walled external container having a pair of spaced-apart circumferential grooves on the inside surface of its wall adjacent its open top, a thin-walled internal container insertable through annulus, with circumferential bead surrounding the mouth of internal container and an external annular protuberance spaced below bead to define an annular channel between the bead and protuberance.

Duplex Divisible Carton, R. O. Spalding (to Owens-Illinois Glass Co., a corporation of Ohio). U. S. 2,591,629, April 1. A duplex divisible carton comprising a pair of units positioned side by side, each unit consisting of a single carton having vertical sides and ends, a cover hinged to one side along the upper edge thereof, with bottom and bottom end flaps extending upwardly therefrom and overlying a portion of the outer end faces of the carton.

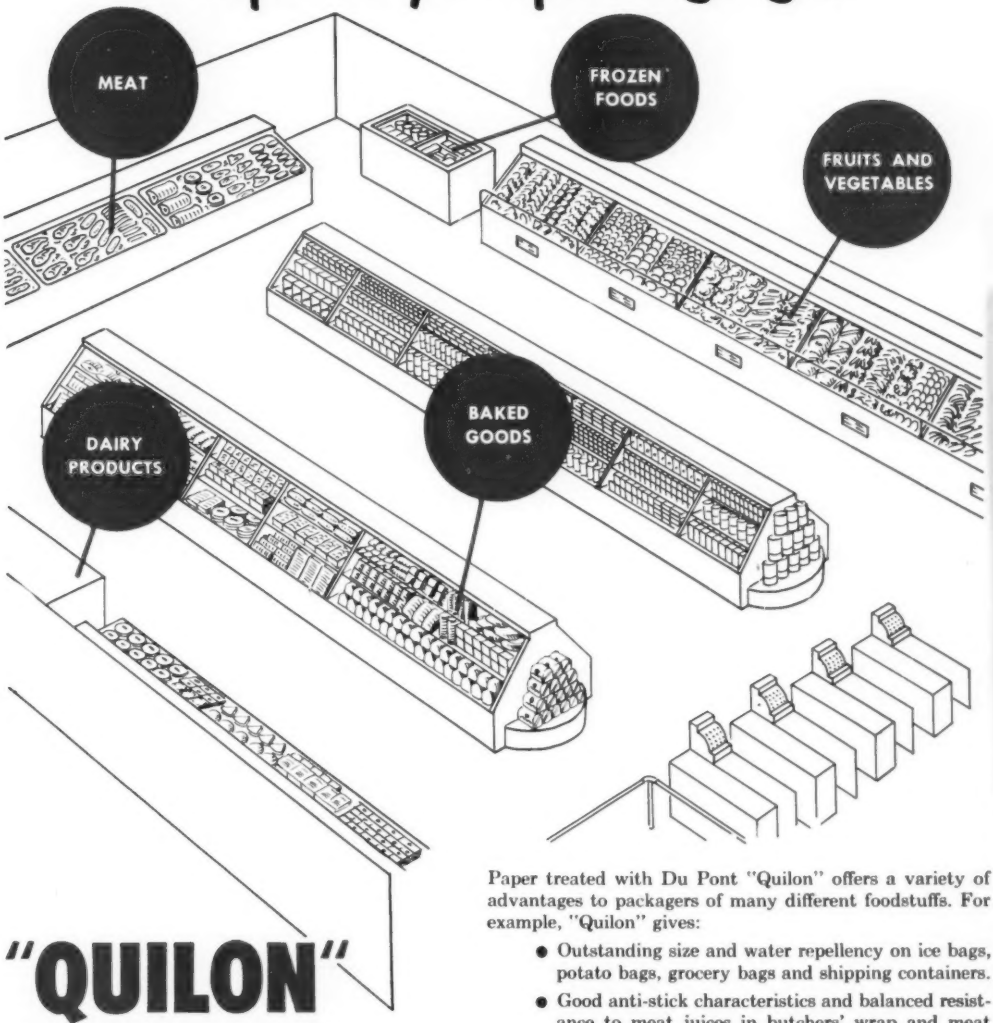
Container, C. B. Pike, Santa Fe., N. Mex. U. S. 2,592,734, April 15. In a container, a pair of sections each having a bottom wall, a top wall, a side wall and a front end wall, said sections having a rear end wall in common, bottom walls, top walls, side walls and front end walls having free edges secured in overlapping relation whereby a double-thickness area extends horizontally along the bottom and top of container and vertically along the front end of container, a ripping tape secured to the exterior of container and extending horizontally entirely around container in downwardly spaced relation to the top of container.

Package Construction, K. H. Keller (to The Miller Co., Meriden, Conn.). U. S. 2,591,703, April 8. A shipping package for fluorescent-lighting components including a wiring channel having assembled lamp auxiliaries and a separate trough-like reflector, which package comprises a spacing tube of stiff paperboard material longitudinally disposed between the concave surfaces of channel and reflector to hold components in spaced relation.

Filling Machine, R. J. Stewart and F. S. Bell (to Crown Cork & Seal Co., Inc., Baltimore, Md.). U. S. 2,591,739, April 8. In a filling machine, a base, a table rotatable on base about a vertical axis, a container-supporting platform carried by and vertically reciprocable with respect to the table and having vertical guideways fixed to the table, with means to urge the platform in one vertical direction.

Combination Sealing, Perforating and Stamping Machine, C. H.

Where can you use DuPont "Quilon" to improve your packaging?



"QUILON"

stearato chromic chloride

DU PONT

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150th Anniversary

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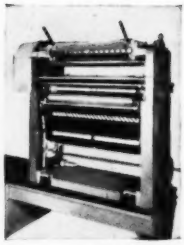
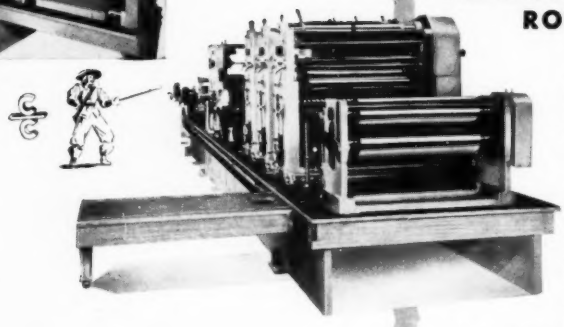
"Quilon" is a registered trade mark of E. I. Du Pont de Nemours & Co., (Inc.)

Paper treated with Du Pont "Quilon" offers a variety of advantages to packagers of many different foodstuffs. For example, "Quilon" gives:

- Outstanding size and water repellency on ice bags, potato bags, grocery bags and shipping containers.
- Good anti-stick characteristics and balanced resistance to meat juices in butchers' wrap and meat board.
- Superior release properties for packaging baked goods and frozen foods.
- Improved lactic-acid resistance in dairy-products containers.

Ask your supplier for paper treated with Du Pont "Quilon" stearato chromic chloride. Or, for more information, write E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington, Delaware.





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with this new heavy-duty, high-speed ROTARY LETTERPRESS

Champlain's new high-speed, heavy-duty Rotary Letterpress permits wash-up, plate changes, and set-up for the next run without press down time.

Individual color units, mounted on roller casters, are easily extracted from normal printing position to a traveling auxiliary bed permitting wash-up, plate changes, etc. while other units are running. Press sizes 26", 31", and 36". Designed with minimum/maximum printing range to meet customer's specifications. Equipment is available with from one to seven color units. Both engraving and impression cylinders can be removed for size change without disturbing press frames or inking mechanism. Write for complete information.

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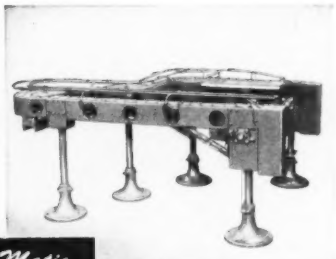


Styl-O-Matic
LATERAL CURVE BOTTLE & CONTAINER CONVEYOR

KEEPS PRODUCTION FLOWING SMOOTHLY

A VERSATILE, economical unit for the food, dairy, beverage, etc. field. Conveys in straight line, around curves (0° to 180°) and up or down normal inclines or declines. Available in steel or stainless steel, with or without pack-off tables. Only one power unit is needed as there are no corner brackets.

WRITE FOR FREE BULLETIN
about this flexible, smooth operating unit that lowers costs and increases production. Ask for Bulletin No. ST-1. Dept. MP-6

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, N. Y.

U. S. patents digest

Heigl (to Adams Corp., Korn Kurls Division, Beloit, Wis.). U. S. 2,591,935, April 8. In a machine for perforating, stamping and heat sealing moistureproof bags for foodstuff, in combination, a pair of relatively movable jaw members adapted to be moved toward and away from each other, a metallic sealing jaw carried by each jaw member for engaging opposite bag surfaces therebetween under pressure and heating element in sealing jaws for maintaining the same at sealing temperature.

Weighing and Packaging Apparatus, F. Slusher (to The B. F. Goodrich Co., New York, N. Y.). U. S. 2,592,074, April 8. Apparatus for weighing and packaging resilient elastic rubber bands, apparatus comprising a rotatable drum having an apertured peripheral surface for depositing the bands.

Method Of Making Containers, H. A. Toulmin, Jr. (to The Commonwealth Engineering Co. of Ohio, Dayton, Ohio). U. S. 2,592,081, April 8. In a method of making a bag, the steps of forming a flexible sheet material into a bag of the desired shape and spraying a rubber latex-gas mixture onto the inner walls of preformed bag whereby a layer of rubber foam is formed on said walls.

Wrapping Machine, G. I. Hohl, F. H. Weise, G. A. Rist and J. M. Rist (to Processing Equipment Corp., Freehold, N. J.). U. S. 2,592,283, April 8. In a wrapping machine having a continuously rotated wrapping wheel provided with circumferentially spaced pockets opening radially and laterally from the peripheral portions thereof for reception of the articles to be wrapped and wrappers therefor, together with means for producing longitudinal folds of the wrapper over an article lodged in wrapping wheel pocket, the combination with said wrapping wheel of wrapper folding means bordering opposite side marginal portions thereof.

Filler Valve and Actuating Mechanism Therefor, H. D. Avars, Salem, N. J. U. S. 2,592,846, April 15. In a container-filling machine, a support for a container to be filled, a filler valve body, means mounting said valve body above said support for movement from a normal position out of engagement with a container on the support downwardly into sealing engagement with the container.

Machine For Erecting Collapsed Cartons, J. V. Ferraro (to Empire Box Corp., Garfield, N. J.). U. S. 2,592,880, April 15. In a machine for setting up cellular cartons, a feeder for collapsed cartons, a movable structure adapted to receive collapsed cartons from said feeder, wall separating means carried by said structure, partition engaging means carried by structure and cam means for operating both means.

Paper Container With Dispensing and Filling Openings For Liquids, R. F. Glaser (to Owens-Illinois Glass Co., a corporation of Ohio). U. S. 2,593,019, April 15. A blank of foldable sheet material shaped and provided with fold lines adapting it to be folded to form a container having a rectangular body, said blank having top forming flaps which, when the blank has been folded to form the body of the container, are foldable inwardly to form the top of the container, end flap having a section forming a plug removable to provide a pour opening.

Partition Structure and Method Of Making It, F. D. Bergstein, Wyoming, Ohio. U. S. 2,593,092, April 15. A process of making a divisible pair of partition structures from a single paperboard blank which comprises providing an elongated paperboard blank, cutting and scoring said blank to provide a longitudinal, substantially medial line for severance and lines of articulation paralleling the first-mentioned line and dividing each side of the blank into foldable halves, each having an inner and an outer part.

Bottle Carrier, G. L. Gilbert (to Owens-Illinois Glass Co., a corporation of Ohio). U. S. 2,593,135, April 15. A blank of foldable sheet material having weakened fold lines along which the blank is foldable for forming a bottle carrier, blank comprising a rectangular bottom-forming panel with a median fold line extending lengthwise thereof, panels integrally united to the bottom panel by fold lines.

Perforated Multiple-Ply Bag, J. W. Meaker, New York, N. Y. U. S. 2,593,328, April 15. In a bag consisting of a plurality of plies forming a body portion of the bag, the combination of a pair of plies of electrical, perforatable sheet material, each of said plies having substantial smooth opposing surfaces and a plurality of electrical perforations distributed throughout the surface areas thereof.

Resin adhesives

(This article continued from page 97)

emulsions are "broken" at a temperature below 32 deg. F.

7. Clean glue pots at the end of each day's run while the adhesive is still liquid. Dried films of vinyl-type adhesives can be removed with a 50-50 mixture of denatured ethyl alcohol and acetone. Dried films of latex or synthetic rubber adhesives can be removed with acetone.

8. Apply thin, even films of resin adhesives.

9. Allow at least 48 hrs. for solvent-containing resin adhesives to penetrate highly waxed stocks. On some wet waxed glassine stocks final adhesive strength does not develop for several days. All new shipments of wet waxed glassine stock should be prechecked before making extensive runs.

10. Maintain adequate and uniform pressure on assemblies for the specified length of time.

11. Allow at least 24 hrs. for complete drying before testing bonds for water resistance.

12. Resin adhesives are slower setting on damp or green paper or paperboard stocks. Faster setting is obtained on dry stocks and in rooms where the relative humidity is low.

13. Resin adhesives are ordinarily supplied at a ready-to-use consistency. Usually it is necessary to add only enough water to replace moisture lost by evaporation or to make minor adjustments to improve machining.

14. Resin adhesives should not be mixed with other adhesives, since many of them are not mutually compatible.

Modern production

Resin-emulsion adhesives proved their true mettle during World War II because of their ability to withstand fungi, water, heat, cold and high humidity, thus enabling the armed forces to transport huge quantities of military supplies safely to all points of the globe under the most adverse conditions.

However, even more evident is the important role emulsion adhesives have played in today's packaging. Because they can be made to set in a fraction of the time required for the fastest-setting vegetable adhesive, they have provided the key to high-speed, automatic packaging. New

equipment which is constantly being devised for improved packaging operations is often built around a specific resin-emulsion adhesive. Their higher cost per pound is almost invariably more than offset by the savings they afford in production costs. Furthermore, because of their ability to adhere to non-porous surfaces they have made possible the use of improved packaging materials such as heavily waxed and varnished board, transparent films, various foils and barrier materials.

As the technology of resin emulsions continues to develop and the packaging field becomes more and more aware of their potentialities, resin-emulsion adhesives will inevitably play an increasingly significant role in modern packaging.

Outlook for tin

(This article continued from page 139)

view of the nature of these products, some have regarded this substitution with skepticism, but the data are typical of those obtained on many occasions and the principle on which they depend has been thoroughly tested. It should be pointed out that tin conservation by the use of CTS is further in the future than some of the other potential measures because such a material is not in commercial production. Since its performance for the products for which its use was required by Order M-81 was satisfactory, it is apparent that its current non-availability is more a matter of economics than of technology.

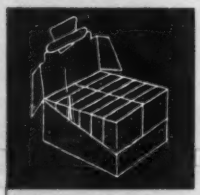
A substantial portion of the tin savings effected under M-81 were due to the discovery of what might be termed a new type of container construction—that is, the combination can. It would be encouraging to report that something of a similar nature and importance could be looked to for assistance in the current emergency, but this is not the case. However, one development of this nature, side-seam striping, is worthy of mention because some tin savings could become available through it now and more later.

The shelf life of containers for strongly corrosive products, for which M-25 provides 1.50 plate, is usually considered directly proportional to the tin coating, assuming other factors remain the same. In other words, the use of 1.25 plate for these applications will reduce shelf life about 20% unless something to counteract the

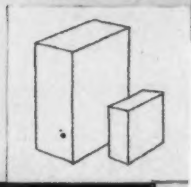
Last Meal!

How *Ritchie* Packaging Helped Write the Sensational d-CON Success Story

COUNTER DISPENSER set-up designed by Ritchie reminds, attracts, sells.



ECONOMY AND MEDIUM SIZE cartons permit users to keep a supply on hand.



AUTOMATIC FEEDER is convenient for daily refilling—encourages multiple use.

DISPLAY SETUP for d-CON is a "pied piper" point-of-sale seller—by Ritchie.

A prime objective of Ritchie designers in fulfilling d-CON's packaging needs was convenience for the customer (and, of course, for the ultimate consumer, *the mouse*).

The result was this ingenious, 2-in-1 self-feeder box: (1) ideal for self-service from the counter dispenser; (2) with bottom flap open and shield lifted, it serves friend mouse his *last meal*.

In addition, Ritchie experts created the other packages in the entire d-CON line—rounding out a family of folding cartons that are helping to make and re-make sales, win and re-win customers!

SEND FOR THIS VALUABLE FREE BOOKLET!

Whatever your packaging needs may be—folding cartons, set-up boxes, fibre cans, transparent packages, paper spools, displays or dispensers, tubes or cores—Ritchie has ready answers. Write today for this book: "101 Ways to Get Better Packaging"—it's yours for the asking.

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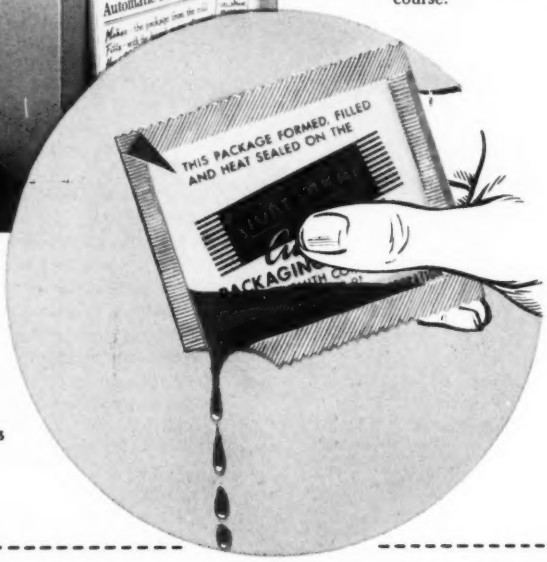
Another FIRST

. . . for S & S and STOKESWRAP! A new method of packaging liquids. And a new way to merchandise your liquid product! It's fast . . . it's economical. First introduced at the recent packaging show in Atlantic City, the general public and trade reactions to this newest achievement of the STOKESWRAP indicate amazing enthusiasm. Just imagine producing 120 single application packages of hand lotion per minute. The complete operation is automatic, from filling to heat-sealing the transparent plastic film pouch. As give-away samples of hand lotion, these small, neat-looking packages contain enough lotion for one application. Perhaps there's an idea here for your product. We'll be glad to discuss your problem, without obligation, of course.



STOKESWRAP ALSO PACKAGES

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lowered tin coating can be devised. In plain cans there is no immediately applicable way of doing this, but for enameled containers, which use the bulk of the 1.50 plate, it appears possible to take advantage of the fact that the side seam tends to be the weakest point so far as corrosion is concerned. Side-seam striping—that is, applying a coat of enamel to the side-seam area after soldering the container—is an effective way to extend corrosion shelf life and could well make possible the use of 1.25 plate for these purposes. Table II contains a demonstration of this principle.

Because the amount of tin used by 1.50 plate is quite small, these potential savings would have little effect as compared to the total consumed. However, it seems likely that side-seam striping will assume a greater importance as a means of substituting heavily coated electrolytic plate, when satisfactorily developed, for enameled hot-dipped. With the differential coating principle, savings roughly threefold those possible by substituting 1.25 for 1.50 could be achieved.

Summary

So far as their immediate effect on tin consumption is concerned, it appears that the measures outlined above would reduce the total tin consumed in the following amounts:

Replacement of 1.50 by 1.25 due to side-seam striping—less than 1%.

Reduction of tin coating on fruit ends:

From #50 to #25	1.2%
From 50 to tin-free steel (such as CTS)	2.4%

Reduction of plain hot-dipped fruit ends to #50—2.3%

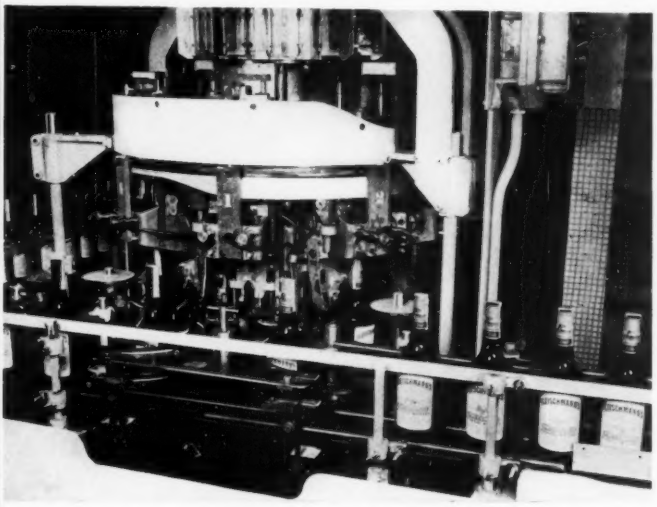
Use of tin-free ends on M-81 basis CTS—3.4%

Although it is clearly much larger, it is difficult to secure agreement on a comparable figure for the introduction of #100/25 differentially coated electrolytic plate, because it depends on the particular estimate of the problems remaining after those discussed here have been solved. However, excluding milk, it is thought that 10 to 15% of the total tin consumed for tinplate could be saved now and the potential is, of course, nearly half the tin employed for hot-dipped.

In other words, we are arriving at the end of tin conservation by conventional methods. What can be done in the future depends increasingly on the tinplate industry.

New automatic cellulose bander in operation

A new fully automatic machine for applying cellulose bands to bottle necks has been in operation on a test basis for nearly a year at the Fleischmann Distilling Corp., Peekskill, N. Y. Although several experimental machines for this operation have been previously tried by various firms, this new development appears to be the first which the user has called successful. The development, undertaken in 1937 by a firm which supplies the bands, was interrupted by the war, but on its resumption one of the leading builders of packaging machinery became a collaborator and is now building and marketing the machine.



OF TURRET TYPE, machine operates by mechanical and vacuum principles.

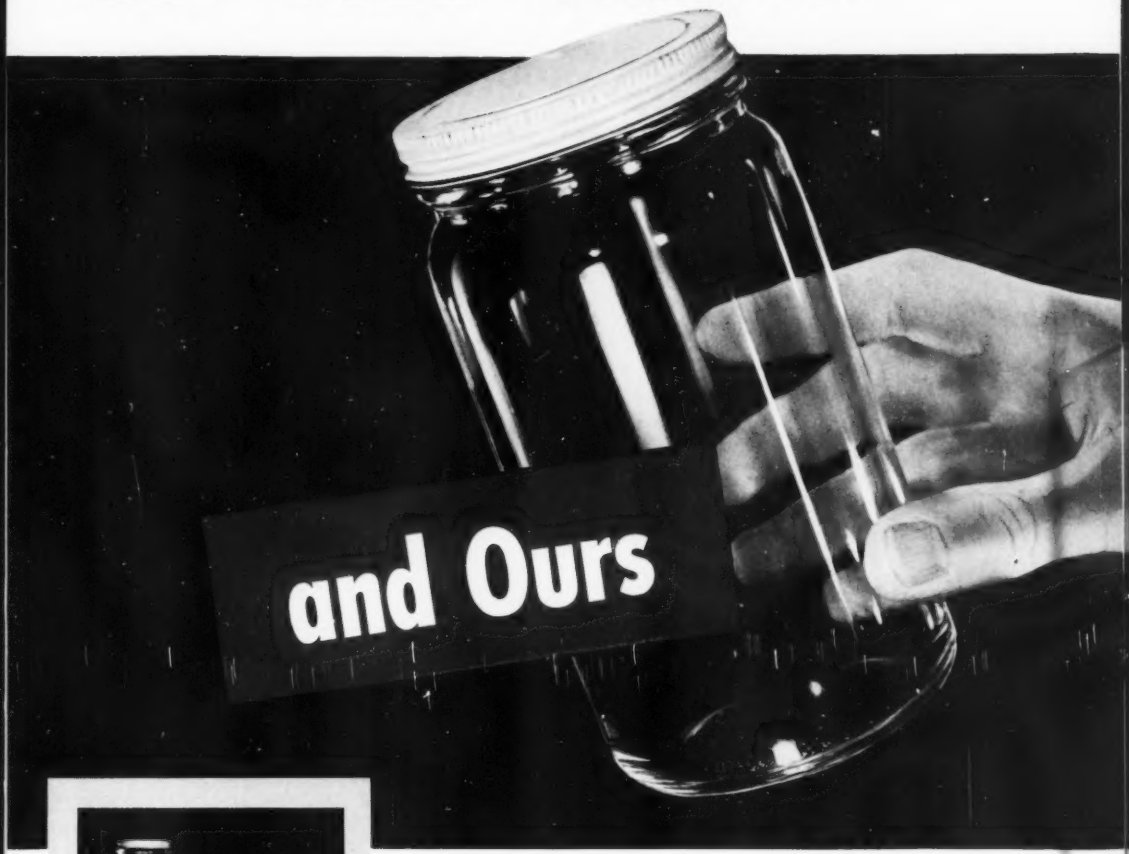
Of continuously operating turret type, the automatic bander is reported to apply wet cellulose bands to bottle necks at speeds ranging from 50 to 140 bottles per minute. By mechanical and vacuum principles, the bander is capable of handling round, flat or square bottles. One operator is required to keep the eight hopper stations supplied with seals. The machine is reported to be capable of handling bands up to 70 mm. long and is adjustable to any size bottle from a half pint to a quart.

Bottles are transferred to the machine over a rotating disk and timed into an intake star wheel by a timing wheel. The star wheel transfers the bottles to a turret station, each in turn, where each is located in position by bottle nests. The operator may fill the hoppers from a loading platform while the machine is in continuous operation and lower them into position with their corresponding magazines. Seals are properly registered with respect to labels by means of a locating lug on the back of the round bottles directly opposite the center of the front label.

Individual seals are picked from the bottom of the magazine by a vacuum pad which carries them from a horizontal to a vertical position. A second vacuum pad contacts the band and opens it. Fingers extend into the band and carry it downward to a point where it is gripped by other fingers which take it from a transfer mechanism and start to apply it over the top of the bottle. Open bands are pulled approximately one-third the way down the bottle neck. When the wet band is fully in position, the gripper fingers release and return to the top of the station for another seal. As the band dries it shrinks to conform to the bottle neck, forming the tamperproof seal.

CREDITS: *Automatic bander developed by Film Dept., E. I. DuPont de Nemours & Co., Inc., Wilmington, Del., in collaboration with American Machine & Foundry Co., 511 Fifth Ave., New York, builders and marketers of the machine.*

Your Good Name...



Every H-A Food Container is designed not only for maximum product display but for maximum label space.

We know how important it is to tie up your good name with your good product. Even our Closures are planned so that your brand identity may be lithographed—in color if you like—on the top.

Good names mean good sales. And speaking of good names—do you know that H-A means the highest quality quantity-produced glass containers available. Produced in a factory near you for economy and better service.

HAZEL-ATLAS GLASS COMPANY, *WHEELING, WEST VIRGINIA*

Welch awards

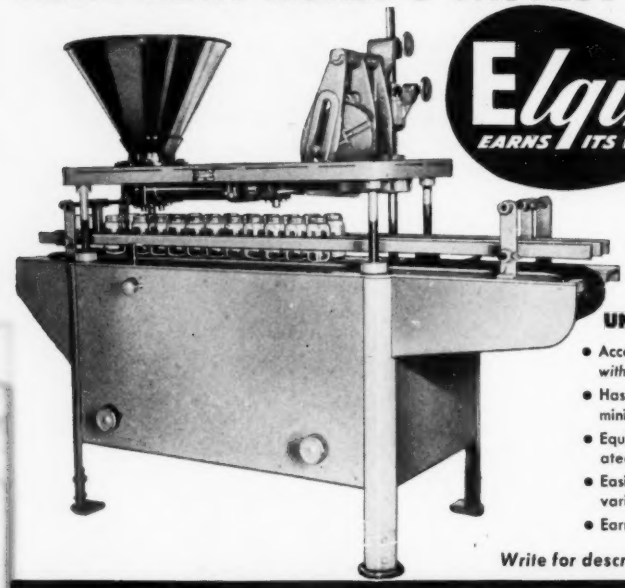
Bronze plaques were presented to the two winners of the 1952 Charles S. Welch Memorial Packaging Award at a luncheon meeting at the annual convention of the Toilet Goods Assn., Inc., May 12.

The award in the classification over $1 retail was presented to J. S. Wiedhopf, president, Parfums Ciro, Inc., for Ciro's "Quintet." This package, containing five ½-dram bottles of Ciro fragrances, was selected as one of the year's best examples of small-quantity packaging that permits women to try out expensive fragrances which otherwise would be out of their budget reach.

The award in the under $1 classification was presented to G. M. Factor, vice president, Helene Curtis Industries, Inc., for this company's "Suave for Men," a luxury hairdressing. The product is contained in a bottle designed to give the effect of alligator-grained leather.

CREDITS: ***Ciro Quintet**—Box, J. Landowne Co., Inc., 561 Grand Ave., Brooklyn 16, N. Y. Bottle, T. C. Wheaton Co., 165 Broadway, New York 6, N. Y. Closures, Victor Industries Corp., 193 Newell St., Brooklyn 22, N. Y. Labels, The Printmark Co., 150 Nassau St., New York. **Helene Curtis Suave**—Bottles, Plax Corp., Hartford 1, Conn. Closure, Armstrong Cork Co., Lancaster, Pa.*

NEW! NEW! WORLD'S FASTEST DUO-VALVE FILLER



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for Liquid and Semi-Liquid Products

CHECK THESE UNIQUE ELGIN "SPEED-KING" FEATURES

- Accommodates all sizes of jars or tin from 1 oz. to 1 gal., *without change parts.*
- Has smooth variable speed continuous conveyor, giving minimum indexing motion.
- Equipped with Fine-Fill adjustment, which may be operated while machine is in action.
- Easily cleaned and quickly adjusted to handle a wide variety of products.
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SAVE...with this New Container of MOLDED PAPER by *Keiding*

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You, too, may have many uses for this tough new Keiding Molded Paper Container!

It has a tight-fitting cover, is ideally suited for granulated substances, powders, soaps, abrasives, small parts — even some liquids and semi-liquids.

Strong enough for shipping, attractive enough for a sales package, it is a sturdy container that will help solve your problems during the current material shortages.

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LARGEST MANUFACTURERS OF MOLDED PAPER CONTAINERS

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Polyethylene Film for Container Lining

Stronger Moisture-Proof Inner Protection

For Barrels

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- **Our Engineers** *Will Help Solve Your Packaging Problems.*
- **WRITE FOR FREE BOOKLET** *giving further information: "Polyfilm" — the 'Wonder' Packaging Material.*

MILK WAGON, 1870 (Scale Model) MUSEUM OF THE CITY OF NEW YORK

It's just a museum piece . . . fortunately!

There aren't many people today who can remember when milk was delivered by farm wagons and dipped from large cans into pitchers brought out to the drivers by housewives.

The modern disposable milk container, shown below, is a far cry from the old "open pail" delivery of years ago. This new container is easy to carry, easy to pour, and easy to store. Its greatest protection lies in the fact that it is used only once, *by you*, and then thrown away!

This modern, protective container was pioneered and developed by the American Can Company. It demonstrates another example of Canco's ability to design and produce *special* containers for *special* products!

Canco, one of the most versatile manufacturers in the packaging field, has over half a century of knowledge and skill to call upon in meeting the problems of its customers.

CONTAINERS – to help people live better

Western Exposition plans

The program for the Fourth Western Packaging & Materials Handling Exposition, to be held Aug. 12-13-14 in the Los Angeles Shrine Convention Hall, has been expanded to include outdoor demonstrations of large and heavy equipment. Also, during two mornings of the exposition, a concurrent Packaging and Materials Handling Institute will be conducted on the campus of the University of Southern California, one block from the Shrine Convention Hall. John R. Huffman, associate professor of industrial engineering at Southern California University, announced the sessions; information on admissions can be secured from the University.

The exhibition and actual operation of large and heavy pieces of equipment will take place on a large parking lot adjacent to the convention hall; other equipment and materials will occupy the entire first floor and mezzanine of the building, according to Saul Poliak of Clapp & Poliak, which is managing the exposition. Further information on the exhibit may be obtained from Western Packaging and Materials Handling Exposition, 759 Monadnock Bldg., San Francisco 5, Calif.

Flowers from Hawaii

(This article continued from page 128)

Department has come forth with an idea in handling flowers that has reduced its claim payments materially. A mesh mail bag has been substituted for the heavy cloth mail bag. All flower packages leaving the Honolulu Post Office are placed in the mesh bags. Postal employees throughout the nation are aware that such bags contain fragile and perishable flowers and require extra careful handling. This has resulted in a marked improvement in handling, but it is not completely foolproof.

Local Hawaiian florists are experimenting with picture-window mailing boxes on the theory that a postal clerk is more likely to give consideration to a flower than to instructions on a package. Whatever devices are used, there is no better insurance for protection of a flower than fastening it securely to the bottom of the box and eliminating all moving articles from within the box.

Much research work needs to be done, however, on proper methods of packaging, packing and the effects of climatic and atmospheric changes on the quality of flowers. United Air Lines has been conducting such experiments for many years. They have proved, for example, that orchids are not affected by altitude. Reduced air pressure, however, causes tightly sealed, cellophane-wrapped packages to swell. A simple safeguard is to punch a pinhole in the package. This small hole also helps to reduce moisture condensation accumulating on the inside of the package.

More and more shippers are coming to realize that a package or box is more than just a shipping or delivery container.

The florists selling at retail who prepare gift packages for shipment directly to a consumer are generally aware of the importance of presenting an appealing package. It is only recently that most wholesale shippers have realized that retail and wholesale florists, too, prefer to buy products that are well presented.

The shippers have found that attractive packaging implies quality. Packaging and brand names are being used to differentiate the otherwise highly identical products. By such differentiation shippers are learning that they can retain their mainland retail and wholesale customers without having to resort to price competition. Price cutting has been one of the most common means of obtaining customers in the highly competitive flower business. There is a definite trend in the whole floral industry, however, toward the use of packaging as a means of competing and yet maintaining favorable selling prices.

CREDITS: *Flowers of Hawaii packages—Plastics lapel-pack vases, Westland Plastics, Inc., Los Angeles; foil-backed wraps, John T. Raisin Corp., San Francisco, using Kimberly-Clark "Kimpak" creped cellulose wadding; vanda trays, foliage cartons and anthurium boxes, Fleishhacker Paper Box Co., San Francisco. Nuuanu Orchids packages—Foil-lined trays, Andre Paper Box Co., San Francisco; containers, Fibreboard Products, Inc., San Francisco.*

Eastman Kodak film

(This article continued from page 104)
a major article in MODERN PACKAGING which was widely read and quoted, and papers on the subject were subsequently given at national packaging conferences.

Today, Kodak packaging activity goes on in 14 plants, branches and subsidiaries with Package Design Service stemming from the main administrative headquarters in Rochester.

The magnitude of producing Kodak's 35,000 different packages can be more fully appreciated through a brief listing of some of the products involved in Kodak's complete system of photography—practically all of them packaged. There are 85 roll, 100 sheet and 10 pack film sizes; 9 amateur and 40 professional movie films; 40 different kinds of plates in 45 sizes; 35 types of photographic paper cut into 1,000 sizes of sheets and rolls and put into 20,000 types of packages; 160 kinds of chemicals for photography; 3,400 synthetic chemicals for research purposes; 500 miscellaneous chemicals; 35 models of cameras, slide projectors, 8-mm. and 16-mm. movie cameras and projectors, plus some 550 other kinds of photographic goods, professional apparatus and photographic accessories.

Eastman Kodak Co. uses practically every known kind of packaging, from simple folding cartons for films and set-up boxes for cameras (mostly made in its own box-making plant) to bottles, cans, all kinds of flexible materials, bags, envelopes, molded and rigid plastics and many kinds of shipping containers.

Advertising and promotion

In addition to a good packaging sense, Mr. Eastman had an unbounded faith in advertising. He wrote the very first ads himself and as early as 1888 his ads were appearing "in all the magazines for November and December to catch the holiday trade": *Harper's Weekly, Century, Scribner's, Outing, Scientific American, Frank Leslie's, Puck, Judge, Life, Truth.*

By 1892 advertising had increased to an extent that required a specialist in the field and Lewis B. Jones was chosen as the company's first advertising manager. By 1899 Eastman was spending three-quarters of a million dollars yearly for advertising—reportedly the largest advertising outlay of that time. By the turn of the century Kodak ads had become familiar to everyone in magazines, newspapers and displays on billboards. Space was taken at world expositions. The "Kodak Girl"—with the style of her clothes and the camera she carried changing every year—smiled engagingly at snapshooters and prospective snapshooters everywhere. In 1897 the word Kodak gleamed from an electric sign on London's Trafalgar Square—one of the first of such advertising signs.

The ads sparked stories of Kodak everywhere. Society leaders, scientists and business men became enthusiasts. The *Chicago Tribune* reported the late Montgomery Ward to be using a Kodak camera to make "excellent Mexican views, full of spirit" and found that George M. Pullman was also a fan. In England Rudyard Kipling wrote, "I am amazed at the ex-

any way you look at it!

yes—we feel sure that any way you look at it . . . quality of product, outstanding service, beautiful color, and practical eye appealing design are four great sales builders in this modern merchandising world. our facilities are at your disposal . . . to help you with any packaging need. stock designs and sizes, as well as a large variety of special sized containers are available. for further information write us.

olive can company

450 n. leavitt st. • chicago 12, illinois

cellence of the little Kodak's work," and Gilbert and Sullivan put a chorus in their comic opera, "Utopia," in which the girls carried Kodaks. Kodak stories became a favorite indoor sport during the '90s and everywhere increased the interest in picture taking.

The Eastman Kodak Co. has never relaxed its efforts to advertise as widely as possible. Recently the *Saturday Evening Post* staged a ceremony in Rochester to present a plaque to Kodak as its oldest continuous advertiser. Today the company's annual budget is spent liberally in monthly magazines, the national weeklies and during the summer months and at Christmas in newspapers as well. Large sums are also spent on widely distributed booklets and brochures promoting photography and Kodak products. In addition, advertising funds have been spent generously for exhibits and displays such as the current series of dramatic coloramas—the largest color-transparency reproduction ever made—seen by millions in New York's Grand Central Station.

Kodak has been fortunate, too, in always having aggressive sales policies. So that photographic dealers might have the best possible service, Mr. Eastman opened, as early as the turn of the century, distribution branches in New York City, Chicago and San Francisco. These facilities were so effective that further distribution points were not needed for many years. Branches in Los Angeles and Rochester were established in 1946. In 1950 a Dallas branch was opened to service the Southwest, which had previously been handled through Chicago. These six branches and their sales forces assure Kodak dealers fast and effective service.

The real key to Kodak's growth is the company's reputation for quality that has been gained through ceaseless research and the continually new and improved products that have come out of the laboratory. Mr. Eastman's employment of a young chemist to devote his time entirely to experiments in 1886 is one of the earliest known instances of an American manufacturer engaging a trained technician (at the expense of the business) solely for experimentation. In 1912 Mr. Eastman established Kodak's main research laboratories at Kodak Park. Today more than 500 scientists and staff assistants carry on extensive research in photography, chemistry and physics. The main laboratory building houses the world's largest photographic library—more than 20,000 volumes. Out of this laboratory have come hundreds of developments for the benefit of mankind in war and peace: developments in aerial photography, X-ray photography, color photography, home movie cameras, microfilming and many contributions to the atomic bomb development—to mention only a few.

Not three-quarters of a century have passed since George Eastman started making the world photo-conscious. In that short span of time the Eastman Kodak Co. has grown to an industry with half a billion in sales annually and photography has become a tool of every-day living from the home movie of Baby's first steps to a picture of a star 500-million light years in space. And in all this the package—as represented by the little carton of film that you can pick up in any corner drug store or from thousands of other counters the world around—has played a more than ordinarily vital role.

CREDITS: *Cartons and many other packaging supplies are manufactured in East-*

man's own plants and considerable packaging machinery is of the company's own design. Principal outside suppliers: **Laminated foil**–*The Dobeckmun Co., 3301 Monroe Ave., Cleveland 13, Ohio; Johnson Foil Mfg. Co., 6100 S. Broadway, St. Louis 11, Mo.; Minerva Wax Paper Co., Minerva, Ohio; Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.; Shellmar Products Corp., Mt. Vernon, Ohio.* **Cartoners**–*F. B. Redington Co., 110 S. Sangamon St., Chicago 7, Ill., and R. A. Jones & Co., Inc., P. O. Box 485, Cincinnati 1, Ohio.* **Cans**–*American Can Co., 100 Park Ave., New York 17, N. Y.* **Glass containers**–*Owens-Illinois Glass Co., Toledo 1, Ohio; Anchor Hocking Glass Corp., Lancaster, Ohio; Hazel-Atlas Glass Co., Wheeling, W. Va.* **Mailing bags** *for Kodachrome–Chase Bag Co., 309 W. Jackson Blvd., Chicago 6, Ill.*

Gas permeability

(This article continued from page 135)

The authors have found that calculations of the specific permeability based on the above formula give results in convenient units.

In the case of carbon dioxide, specific permeabilities between 0 and about 500 were obtained with the various films which were tested.

Evaluation of results obtained

The permeabilities of a wide variety of sheets, some of them of several thicknesses, were studied by this method and the results are summarized in Table I. All the values reported except those in italics represent averages of from two to 10 determinations. Because of inherent inaccuracies in the method, the results are recorded to only two significant figures.

Because of the lack of temperature control, the average room temperature during the time of any given test ranged between 22 and 28 deg. C., which should give a variation in permeability units of about 30% above and below that at a mean of 25 deg. C.

This assumption is based on data given by Amerongen (18), which, when plotted, indicate that a rise in temperature of 1 deg. C. will usually be accompanied by a 10% change in the permeability.

To ascertain the degree of reproducibility of results obtained by this method, a statistical analysis was made of the data for polystyrene of 0.0019-in. gauge at 0% R.H. It will be seen from Table II that the coefficient of variation was 28.5%, which

corresponds well with the value of 30% mentioned above.

The values obtained for permeabilities at 0% R.H. have been plotted in Figs. 4 and 5 with reference to the reciprocals of film thicknesses. The curve for any given sheet should be and is a straight line. In both these figures single points have been plotted for a number of films where sheets of a single gauge only were available. Broken lines have been drawn connecting these single points with the origin.

These lines will give some idea of the probable trend of permeabilities at a relative humidity of 0%, over a wide range of film thicknesses.

In the case of saran, the trends of the straight-line curves are based on data obtained with sheets of a thickness of 0.0005 in. as well as of 0.0010 in.

To avoid extending the width of the charts (Figs. 4 and 5), the plotted data for the 0.0005-in. film are not shown on the charts, but the fact that these data were used is indicated by the arrow heads at the ends of the curves.

The permeability of ethyl cellulose was high compared with the permeabilities of other films. Its permeability appeared to be much more affected by changes in film thickness than was the case with a film such as polyethylene.

The N2 Pliofilm showed low permeabilities, which were of the same order of magnitude as those of Saran S-517. This particular grade of Pliofilm is reported by the manufacturer to be one of the less-permeable grades. The differences in the specific permeabilities of the two grades of Pliofilm, N2 and FF, show the necessity for recording the exact types used in permeability studies.

Figs. 6 and 7 give some idea of the range of specific permeabilities of the films tested. In the comparison of one homogeneous film with another, the specific permeabilities are considerably more important than the permeabilities themselves, for calculations of specific permeabilities reduce the measurements to the basis of films of a common thickness.

In the last column of Table I are recorded the ratios of carbon dioxide permeability to oxygen permeability (P_c to P_o). The high ratio for S-60 polymer is of considerable interest compared with the low ratio for polyethylene. Apparently the ratio for the S-60 polymer is about 2½ times as high as that for polyethylene.

In two instances permeabilities were studied with respect to the effects of different relative humidities. Plain cellophane (P-1) showed a tremendous increase in permeability with increase in relative humidity, whereas ethyl cellulose showed a less marked decrease, especially with respect to carbon dioxide permeability. Todd (12) also has reported a decrease in permeabilities of test sheets at high relative humidities.

A fair evaluation of our method by comparison of our results with those obtained by other methods (7-16) is difficult. This difficulty can be largely attributed to the paucity of published data and also to the lack of completeness in the descriptions given of film types.

It is believed that the results obtained by the new method are as valid as those obtained by other commonly used methods. On the whole, agreement with previous work is good.

The new method offers a number of useful advantages over other methods and should, therefore, be of considerable use in the food-packaging industry.

Summary

A method for measuring oxygen and carbon dioxide permeabilities of sheet packaging materials, based on Dalton's law of partial pressures, is described. The test sheet is mounted between two chambers, the lower containing nitrogen and the upper swept with a mixture of oxygen and carbon dioxide. These gases permeate the sheet into the lower chamber at a rate dependent on their partial pressure differentials across the sheet. After small amounts of the gases have penetrated to the nitrogen side of the sheet, the gaseous mixture there is analyzed for oxygen and carbon dioxide.

The results approximate actual packaging conditions, because the driving force across the sheet remains nearly constant and the pressures on both sides of the film are essentially atmospheric.

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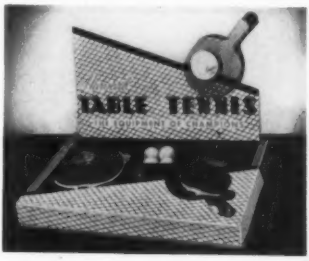
Set-up champion

Grand award in the second annual Set-up Paper Box Competition went to the Paris Box Co., Inc., Boston, Mass., for the box used by Harvard



Specialty Mfg. Corp. to package its table tennis set, which also won first place in class D of the competition for Best Display Box. It combines sturdy construction with eye appeal.

The award was made by popular vote of the entire membership of the National Paper Box Mfrs. Assn. at the 34th annual meeting in Chicago, May 11-14, and was chosen from the group of winners previously announced in the May issue of MODERN PACKAGING, page 134.

CLASSIFIED ADVERTISEMENTS

Modern Packaging reserves the right to accept, reject or censor classified copy.

EMPLOYMENT • BUSINESS OPPORTUNITIES • EQUIPMENT (used or resale only)

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NEW SIMPLEX MODEL #4 CELLOPHANE AND PLIOFILM BAG MAKER: Still in crate, serial #1928. Pliofilm sealing shoes, 3½" gusset plate, cylinder and all std. equipment, static eliminator, voltage regulator, Pliofilm stacker, Electric eye attachment, one way roller assembly, duplex attachment, duplex wall sealer attachment, two extra roll shafts with hubs and one set Cellophane sealing shoes. Johnson-Coppock Company, 8026 Lawndale Avenue, Skokie, Ill.

HAYSSEN AUTOMATIC STANDARD UNDERFOLD MACHINE: Model No. 7-14, motor equipped for 220-440 volt, three phase, sixty cycle variable speed drive. Thermostatic heat control, flight in-feed conveyor and belt discharge. Brand new, three months old in original crate. Subject to prior sale. Contact C. D. Werwin, 1473 Barnum Avenue, Bridgeport, Conn. Telephone 6-0181.

ONE TRANSWRAP MODEL A: Auger feed, practically new, excellent condition, a bargain. Also, approximately 4000 pounds .0015" and .002" by 3¾" heat-sealable aluminum foil, new condition, in whole or part below converter cost. Box 345, Modern Packaging.

3 SIMPLEX HEAT SEALING MACHINES: For polyethylene bags. One new, two slightly used. Reasonable. Waljohn Plastics, Inc., 437 88th Street, Brooklyn 9, N. Y., Telephone No. Shore Road 8-0300.

MODERN REBUILT EQUIPMENT AT TREMENDOUS SAVINGS: International S. S. Straightline 160/min. Vacuum Filler. Resina Models S and LC Automatic Cappers. CRCO New Way MH Wraparound Labeler. Stokes and Smith A and B Transwrap Fillers. Capem EAF 4 head Rotary Capper. Island Equipment Styline Bottle Unscrambler. Stokes & Smith G1, G2, G6 and HG88 Auger Powder Fillers. Triangle Elec-Tri-Pak G2C, A6CA Fillers. Filler 4 Head S. S. Filler. Knapp 429 and Ceco Carton Closers. Pony ML and M Labelrites. Pneumatic Scale Auto. Cartoning Lines, 60 and 30 per min. Ceco, Redington and R. A. Jones Automatic Cartoning Units. Package Machinery Co. CA2, DF1, FA and FA4Q Wrappers. Hayssen 3-7, Miller, Scandia Model SSU1 Wrappers. Campbell Auto. Cellophane Wrapper. This Is Only a Partial List. Tell Us Your Requirements.

Union Standard Equipment Company
318-322 Lafayette Street
New York 12, N.Y.

CAMBEL WRAPPER: Model No. 2W6 with attachments for wrapping plastic spoons. Available for immediate shipment at an attractive price. Machine never put into production. Equipped with 220 volt, 60 cycle, 3 phase motor and Fisher-Pierce, photo-electric equipment for registering printed wrap. Dapol Plastics, Inc., 90 Grove Street, Worcester, Mass.

HELP WANTED

DEVELOPMENT ENGINEER: Familiar with the formulation and application of resinous material for surface coating. Experience in the application of such materials to continuous webs highly desirable. Submit complete resume, along with recent snapshot and salary requirements. Good starting salary, many desirable employee benefits. Box 344, Modern Packaging.

PACKAGING ENGINEER: Leading manufacturer in the drug and surgical dressings field has opening for a young man interested in the development of new packages. Work includes design of package for sales appeal, protection, and automatic production. Industrial design or engineering background helpful. Plant located within commuting distance of the New York Metropolitan Area. Box 347, Modern Packaging.

INDUSTRIAL ENGINEER
Large midwestern cosmetic and packaging plant seeks Industrial Engineer capable of layout, planning, material handling. Good opportunity to become associated with one of largest and most aggressive companies in the country. Good pay. Permanent. Box 348, Modern Packaging.

EXECUTIVE SALESMAN: Southern carton manufacturer has opening for high caliber man able to handle tonnage accounts. Paraffin carton experience desirable. Base salary $10,000 plus commission and expenses. Real opportunity for top earnings and advancement. In reply state full qualifications, experience and background. Box 349, Modern Packaging.

DEVELOPMENT ENGINEER: A national concern needs a mechanical engineer to head up development program in cellophane bag manufacture. Machine design and production experience in cellophane desired. This position affords an excellent future to a man with proper qualifications. Box 346, Modern Packaging.

CHEMIST: Adhesive experience. Must have several years starch dextrin, animal glue, polyvinyl resins, latex, or hot melt formulation. Excellent opportunity for advancement with young fast growing concern. Salary open. Reply by mail—strictly confidential. Federal Adhesives Corp., 210 Wythe Avenue, Brooklyn, N. Y.

PRODUCTION MANAGER: Experienced man wanted immediately. Heavy background in production scheduling and expediting for printing, lithographing and folding box industry. New, air-conditioned plant in Middle Atlantic area. Many employee benefits. Good future and top salary for right man. Replies kept strictly confidential. Box 352, Modern Packaging.

ASSISTANT TO FOREMAN: For glue department of company producing finest quality folding cartons. Need man with good background in this field. Ideal working conditions in new, air-conditioned plant. Middle Atlantic area. Moving expenses paid. Numerous employee benefits. Replies will be held confidential. Box 353, Modern Packaging.

SALES ENGINEER WANTED: Confidential applications are invited for the position of Sales Engineer. Applicants should be familiar with all standard printing processes and slitting procedures as used in converting plants. Address reply to personal attention of Edward J. Peal, Chief Engineer, Kidder Press Company, Inc., Box 365, Dover, New Hampshire. State age, present position and previous experience. No contacts will be made with your present employer without specific permission.

CUTTER AND CREASER PRESSMAN: Experienced operator on Kellys or Miehles for leading folding box company. Ideal working conditions in new air-conditioned plant located in Middle Atlantic area. Moving expenses paid. Many employee benefits. Top salary for qualified man. Box 354, Modern Packaging.

PACKAGING COORDINATOR: General supervision and coordination of layout and design of packages for wide variety of pharmaceutical products. Determine specifications for purchasing. Responsibility for organizing and supervising inspection of packaging materials. Salary open. Box 355, Modern Packaging.

SALESMAN: Progressive converter with modern new factory has openings for several men. No objection to side-line men. We are converters and printers of cellophane, glassine, polyethylene and pliofilm in the form of bags, rolls, and sheets. Our prices are most competitive and quality is top notch. In reply give age, experience, present lines carried, territory covered, etc. Box 356, Modern Packaging.

SALESMAN: With executive ability to head product division of 25 yr. old N. Y. film converter. Knowledge fresh fruit and produce prepackaging industry at grower, distributor, retail level. New line printed and plain polyethylene, pliofilm, cellophane, bags, sheets, rolls, specials and stock items. Experience in field essential—ability to supervise, direct, promote sales requisite. Replies held confidential. Box 358, Modern Packaging.

MECHANIC: A-1 Machinist and trouble-shooter for bag and envelope manufacturer. Must have ideas for new developments, with ability to improve existing high speed equipment, in converting plant of cellophane, polyethylene, and other flexible materials. Salary open. Box 359, Modern Packaging.

MISCELLANEOUS

FOR SALE: Bleached Kraft, 50#, with Polyethylene 15# Coating, one side, 26 rolls 24" dia. by 49" wide, 13 rolls 24" dia. by 33" wide. In manufacturers original wrappings. Will sell in one lot or portions thereof. Brown Bag Filling Machine Co., Inc., Fitchburg, Mass.

WANTED: Package Machinery Company Wrapper No. FA-2. State price, location, age, model number, hours used, sizes can handle. We are not dealers. Box 350, Modern Packaging.

FOR SALE: At clearance prices paper backed foil, gold, red, dk. blue, lt. blue, 30# B 8¼" wide rolls; 80 reams. Pink, silver, floral embossed. 15# wax 3¼" wide rolls; 42,000 lbs. Cellophane 300# tango 4½" wide rolls; 150 lbs. Composition foils 40# craft 22" and 24½" wide rolls; 4,000 lbs. Box 351, Modern Packaging.

WANTED: To buy one second hand humidity cabinet having approximate capacity 10 cu. ft. Cabinet must be capable of control to ± 1°F. and ± 2% relative humidity at 100°F. Humidity ranges required are 25% R.H. and 75% R.H. Box 357, Modern Packaging.

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INDEX OF ADVERTISERS

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Modern packaging

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A BRESKIN Publication

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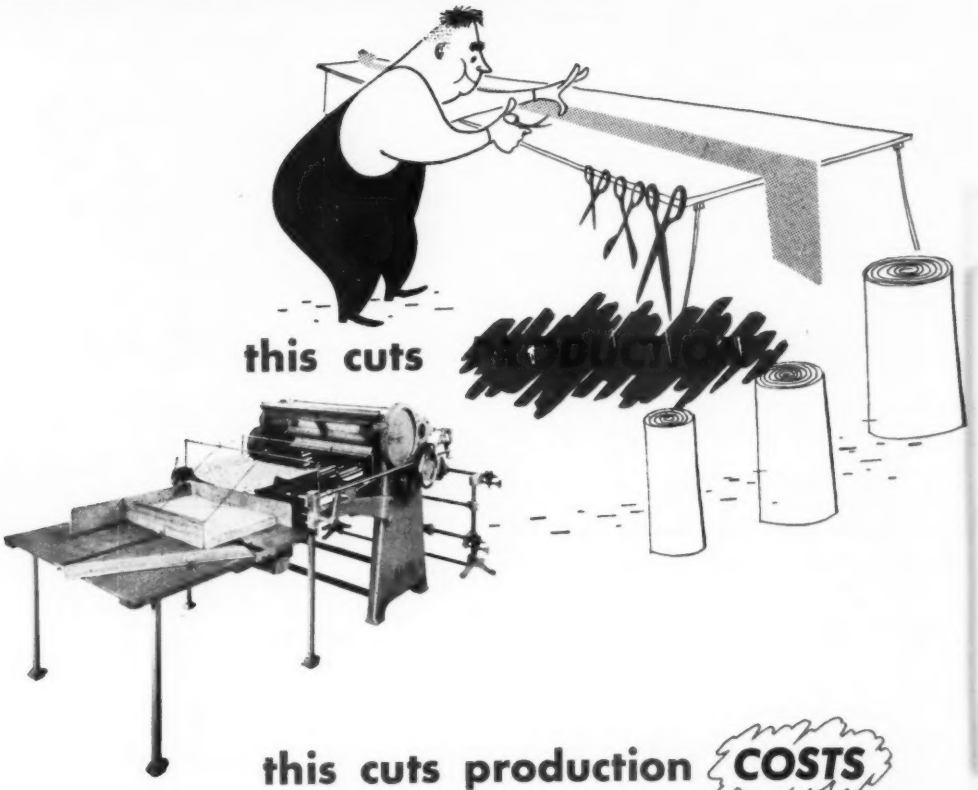

this cuts production

this cuts production COSTS

Cutting can boost or batter your output . . . depending on how it's done. Old-fashioned, slow methods brake your production. Buying materials already cut may break your production budget. As hundreds of manufacturers know, your own Sheeter in your own plant is the answer! It sheets anything from rolls . . . any time, any quantity, any size. There's plenty more you should know about Sheeters and sheeting, too . . . BECK has the answers.

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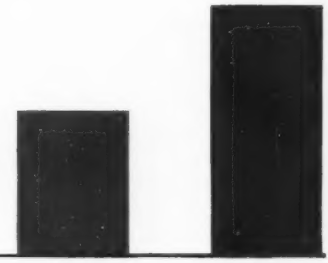
sales up 24%



operation speeded up 40%

That's the 6 months' record of Wisconsin Meat Product's Luncheon Meats—after they began PACKING IN FLEX-VAC

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Flexible—transparent—vacuumized! FLEX-VAC Vacuum Pack is compact, feather-light, and completely seals out flavor-stealing air. It's the perfect self-service package for luncheon meats, cheese, sliced bacon! Color prints perfectly—and today identifies the products of scores of leading packers.

FLEX-VAC PACKED PRODUCTS ARE 7 WAYS BETTER

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"Picture packages" by Shellmar stand out on retail counters. Full-color gravure printing reproduces the product in all its natural goodness . . . inspires customer-confidence. And the distinct individuality of a "picture package" makes a lasting brand name impression on shoppers.

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